DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

Michael O. Leavitt
Governor
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Executive Director
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DAQE-067-95

January 31, 1995

James R. Van Orman
Director, Environmental Management
Headquarters Ogden Air Logistics Center
Department of the Air Force
Hill Air Force Base, Utah 84056

Re: Modified Approval Order to DAQE-1006-94, Paint Booth Consolidation

Dear Mr. Van Orman:

The attached document is an Approval Order with Fee Statement in the amount of $400.00 for the above referenced project.

Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. Arjun Ram. He may be reached at (801) 536-4066.

Sincerely,

Russell A. Roberts, Executive Secretary
Utah Air Quality Board

RAR:AR:dn

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Abstract

This Approval Order (AO) consolidates the permit requirements for all paint booths at Hill Air Force Base (HAFB). This AO covers booths that are presently permitted, those that require permits (proposed booths and existing booths in operation), and grandfathered booths. The sum of the allowable volatile organic compound (VOC) emissions from booths that are presently permitted is 201.2 tons per year. HAFB anticipates that no more that 201.2 tons per year of VOCs will be emitted out of all the paint booths at the base, including emissions from presently operating and permitted booths, booths operating without a permit, grandfathered booths, and future booths. HAFB will centrally monitor and manage the VOC emissions from the paint booths on the base. The following emissions are expected from the facility:

Volatile Organic Compounds (VOCs)	**201.2 tons per year**
Total Suspended Particulates (TSP)	**1.5 tons per year**
PM_{10}	**0.6 tons per year**

General Conditions:

1. This AO applies to the following company:

   Department of the Air Force
   Headquarters Ogden Air Logistics Center (AFMC)
   Hill Air Force Base, Utah 84056-5990
   Telephone: (801) 777-0359
   Fax: (801) 777-4306

   The equipment listed below in this AO shall be operated at the following location:

   PLANT LOCATION:

   Universal Transverse Mercator (UTM) Coordinate System: 4,552,000 meters Northing, 415,000 meters Easting

2. Definitions of terms, abbreviations, and references used in this AO conform to those used in the Utah Air Conservation Rules (UACR), Utah Administrative Codes (UAC), and Series 40 of the Code of Federal Regulations (40 CFR). These definitions take precedence unless specifically defined otherwise herein.

3. Hill Air Force Base shall install and operate the paint booths according to the information submitted in the Notice of Intent dated July 29, 1993, and additional information submitted to the Executive Secretary dated January 12, 1994; February 14, 1994; May 4, 1994; and September 20, 1994.

4. A copy of this AO shall be posted on site. The AO shall be available to the employees who operate the air emission producing equipment. These employees shall receive instruction as to their responsibilities in operating the equipment according to all of the relevant conditions listed below.

5. The approved installations shall consist of the paint booths listed in Table 1 and Table 2, which are given below. This AO is also applicable to several portable, custom built paint booths which are used to paint such portions of the aircraft that typically cannot be painted in other installed paint booths, listed in Table 1 and Table 2. The conditions in this AO that are applicable to individual paint booths shall apply to each of the paint booths listed in Table 1 and Table 2, unless indicated otherwise. The information provided in Table 1 and Table 2 about the characteristics of each paint booth is only to be used to identify the booths and the stacks.

Table 1: The following booths have been permitted by previously issued AOs. This AO shall replace all painting related conditions in the AO for the individual paint booths given in the table below:

Building (AQUIS #)	Previous AO (if issued)	Manufac-turer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
5D (3314)	BAQE-977-1	Binks	10,500	Water Fall	34"
5N (3859)	DAQE-167-92	DeVilbiss	2,000	Dry	12"
48 (3649)	7/18/83	Custom	140,000	Dry	60"
220 (3116)	DAQE-167-92	Binks (9 Bays)	18,500 per bay	Water Fall (each bay)	2 @ 48" (each bay)
220 (3117)	DAQE-036-87	DeVilbiss (6 bays)	11,500 per bay	Water Fall (each bay)	60" (each bay)
238 (34265)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34268)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34271)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34274)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34277)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34280)	BAQE-525-88	Binks	12,000	Water Fall	36"
238 (34244)	BAQE-525-88	Binks	8,000	Water Fall	24
270 (3903)	BAQE-454-89	JBI	470,000	Dry	6 @ 60"
507 (3050)	BAQE-551-89	DeVilbiss	25,000	Water Fall	2 @ 42"
507 (3053)	6/27/78	DeVilbiss	14,000	Water Fall	48"
507 (3054)	6/27/78	DeVilbiss	14,000	Water Fall	48"
507 (3055)	6/27/78	DeVilbiss	14,000	Water Fall	48"
507 (3056)	6/27/78	DeVilbiss	14,000	Water Fall	48"
507 (3057)	6/27/78	DeVilbiss	27,175	Water Fall	42"

507 (3058)	6/27/78	DeVilbiss	27,175	Water Fall	42"
507 (3251)	6/27/78	DeVilbiss	27,175	Water Fall	42"
509 (3150)	BAQE-494-89	DeVilbiss	16,000	Water Fall	34"
509 (3151)	BAQE-494-89	DeVilbiss	16,000	Water Fall	34"
509 (3153)	BAQE-494-89	DeVilbiss	2,141	Dry	16"
509 (34058)	BAQE-494-89	DeVilbiss	2,141	Dry	16"
514 (3102)	BAQE-174-91	DeVilbiss	5,250	Dry	24"
534 (3737)	BAQE-359-88	Custom	12,000	Dry	16"
751 (34161)	DAQE-752-93	Binks	3,500	Dry	18"
847 (3156)	BAQE-030-88	Binks	193,600	Water Fall	8 @ 36"
1133 (3734)	BAQE-029-88	Custom	43,000	Dry	60"
1251 (3741)	BAQE-101-89	Binks	27,000	Dry	42"
1424 (34256)	BAQE-355-88	Binks	25,200	Water Fall	48"
1701 (3915)	BAQE-039-91	DeVilbiss	18,000	Dry	34"
1701 (3919)	BAQE-039-91	JBI	190,000	Dry	6 @ 60"
1913 (3728)	BAQE-026-88	DeVilbiss	17,900	Dry	42"
1938 (3560)	BAQE-642-88	Binks	10,000	Dry	36"
2026 (3732)	BAQE-977-1	Binks	15,000	Dry	34"

Table 2: **The following booths have been constructed. They shall be permitted to operate under the conditions of this AO.**

Building (AQUIS #)	Manufacturer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
5E (3332)	Binks	5,000	Dry	18"
12 (3953)*	Custom	10,500	Dry	36"
48 (3650)	JBI	15,000	Water Fall	48"
100J (3286)	Binks	7,700	Dry	36"
100J (3292)	DeVilbiss	13,500	Water Fall	48"
220 (3982)	DeVilbiss	25,200	Water Fall	6 @ 36"
238 (34407)	DeVilbiss	45,000	Water Fall	2 @ 20"
505 (3263)	Paasch	7,500	Water Fall	42"
509 (34901)	DeVilbiss	18,200	Water Fall	40"
509 (34902)	DeVilbiss	18,200	Water Fall	40"
515 (34409)	DeVilbiss	48,000	Dry	2 @
590 (3929)	Protectaire	6,000	Water Fall	36"
592 (3931)	Protectaire	10,000	Water Fall	36"
810 (34217)	DeVilbiss	8,000	Dry	42"
847 (3247)	Binks	15,000	Water Fall	48"
847 (3248)	Binks	16,000	Water Fall	48"
988 (34408)	DeVilbiss	6,000	Dry	42"

*Grandfathered booth that is permitted under this consolidated permit

The requirements of Condition #10 (use of high VOC paints) voids the AO DAQE-548-91, dated August 6, 1991.

6. A Notice of Intent is required if HAFB plans to construct new paint booths at the Base (refer to Condition #1 for Base location) in the future. Such new paint booths may be appended to the list of paint booths in Table 1 (Condition #5) of this consolidated AO. For new paint booths, the Executive Secretary shall be notified in writing upon start-up of the installation, as an initial compliance inspection is required. Eighteen months from the date of this AO the Executive Secretary shall be notified in writing of the status of construction/installation if construction/installation

is not completed. At that time the Executive Secretary shall require documentation of the continuous construction/installation of the operation and may revoke the AO in accordance with R307-1-3.1.5, UAC.

Limitations and Tests Procedures

7. Visible emissions from any point or fugitive emissions source associated with the paint booths shall not exceed 10% opacity. Opacity observations of emissions from the paint booths shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9, but the requirement for observations to be made at 15-second intervals over a six-minute period shall not apply. Any time interval with no visible emissions shall not be included.

8. The VOC emissions from all painting operations at HAFB shall not exceed a combined total of 201.2 tons per year for high-VOC and low-VOC paints. This limit includes painting operations in paint booths, identified in Condition #5, as well as other painting operations identified in Condition #11. Compliance with the annual limitations shall be determined on a rolling 12-month total. HAFB shall calculate a new 12-month total before the fifteenth day of each month using data from the previous 12 calendar months. Records of paint/thinner consumption shall be kept on a daily basis for all periods when the paint booths are in operation. Records of paint/thinner consumption, including rolling 12-month totals, shall be made available to the Executive Secretary or his representative upon request, and shall include a period of two years ending with the date of the request. For reporting VOC emissions from clean-up operations, refer to Condition #13 B. The records shall include the following data for each item (paint/thinner) used by the paint booths:

   A. Name of paint or thinner
   B. VOC content of the paint (pounds of VOC per gallon of paint)
   C. Amount of paint used on a daily basis for each paint booth

   VOC emissions from the <u>paint</u> shall be determined as follows:

$$\text{VOC emission (tons)} = \frac{(\text{VOC content of paint (lb/gal)}) * (\text{gallons of paint consumed})}{2{,}000 \text{ lb/ton}}$$

   VOC emissions from <u>solvents and thinners</u> shall be determined as follows:

$$\text{VOC emission (tons)} = \frac{(\text{Density (lb/gal)}) * (\text{gallons of thinner or solvent consumed})}{2{,}000 \text{ lb/ton}}$$

   The VOC emissions from each painting operation shall be calculated using the above procedure, for each paint booth. The combined total of the VOC emissions thus determined for all painting operations at HAFB shall not exceed 201.2 tons on a rolling 12-month basis.

9. Particulate control devices for the existing booths are given in Table 1 and Table 2 (Condition #5). All paint booths that HAFB plans to construct at the Base (refer to

Condition #1 for Base location) in the future shall be equipped with a water wall, or set of paint arrestor particulate filters to control particulate emissions, or equivalent. All air exiting the booth shall pass through this control system before being vented to the atmosphere. Equivalency shall be determined by the Executive Secretary.

10. The volatile organic content of the paints used in the booths shall not exceed 3.5 pounds per gallon without prior approval in accordance with R307-1-3.1, UAC, except for 3,500 gallons of high VOC paint (VOC content greater than 3.5 pounds per gallon) per rolling 12-month that may be used for:

    A. specific painting operations for which low VOC paints (VOC content less than 3.5 pounds per gallon) are not commercially available, or

    B. Painting operations that require high VOC paints because of performance specifications and corrosion control requirements.

    High solids (low VOC) paints shall not be thinned or otherwise reduced beyond manufacturers recommendations. These parameters shall be tested if directed by the Executive Secretary using the appropriate American Society for Testing Materials (ASTM) method or another method approved by the Executive Secretary.

11. HAFB shall be permitted to paint (touch up) up to a maximum of 10 square feet area on any component or aircraft outside of the paint booths specified in Table 1 and Table 2 (Condition #5), within the Base (refer to Condition #1 for Base location). The following two situations are exemptions to this condition:

    A. The use of 150 gallons of high VOC paint (this is included in the use of 3,500 gallons of high VOC paint allowed base-wide, as per condition #10) and 100 gallons of low VOC paint (high and low VOC paints are defined in Condition #10) at HAFB museum in accordance with DAQE-461-92.

    B. The use of up to 200 gallons of paint per year for touch up painting associated with painting C-130 aircraft at HAFB.

    Records shall be maintained on the amount of paint used for such "touch up" painting operations (including the paint used in the exemptions stated above), and the resulting emissions (determined according to the procedure described in condition #8) shall be accounted for in the rolling 12-month VOC emissions limit of 201.2 tons per year from all painting operations at HAFB.

12. HAFB shall operate paint guns and solvent cleaning stations for paint guns and other painting equipment according to the following conditions (in accordance with Section 4.9.4, UACR):

    A. HAFB shall use paint gun cleaners to clean all paint guns. Fabricated paint gun cleaners shall only be used to clean those paint guns for which commercial paint gun cleaners are not available.

B. A cover shall be installed which shall remain closed except during actual loading, unloading, or handling of parts in the cleaner. The cover shall be designed so that it can easily be operated with one hand.

C. An internal draining rack for cleaned parts shall be installed on which parts shall be drained until dripping ceases. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

D. Waste or used solvent shall be stored in covered containers. Waste solvents or waste materials which contain solvents shall be disposed of by recycling, reclaiming, by incineration in an incinerator approved to process hazardous materials, or by an alternate means approved by the Executive Secretary.

E. Tanks, containers, and all associated equipment shall be maintained in good operating condition and leaks shall be repaired immediately or the solvent cleaner shall be shut down.

F. All painting operations for the exterior of the aircraft shall use High Volume Low Pressure (HVLP) spray guns, except in applications where the use of high VOC paint is required, as described in Condition #10 of this AO.

G. Written procedures for the operation and maintenance of paint guns and solvent cleaning equipment shall be permanently posted in an accessible and conspicuous location near the equipment.

Reporting

13. HAFB shall centrally manage and monitor the VOC emissions from all the paint booths (specified in Table 1 and Table 2, Condition #5), from portable paint booths, and from clean-up operations. The VOC emissions from the paint booths and clean-up operations shall be determined according to the method described in Condition #8. For each calendar year (January 1st to December 31st), HAFB shall submit to the Executive Secretary the following information before March 31st of the following year (except for item D under this condition):

A. A list of paints used in quantities greater than 1% of the Base-wide total annual paint usage. This list shall identify paint type, quantity, and VOC content in pounds per gallon. The Manufacturer's Material Safety Data Sheet (MSDS) for each of the listed paints shall be included with this list.

B. A list of thinners, solvents, and chemical compounds, consumed in the clean-up operations as defined in Condition #8. This shall only include VOC emissions from cleaning operations that use other than commercial paint gun cleaners. This list will identify material type, quantity, and VOC content in pounds/gallon. The MSDS for each of the listed paints shall be included with this list.

C. An inventory of all the paint booths with the monthly totals of all VOCs emitted from paints and thinners/solvents. These monthly totals shall be

summed up to give an annual quantity of paints and thinners/solvents. This list will also be used to update the status of all booths located at HAFB.

D. The total amounts of each Hazardous Air Pollutant (HAP) as defined in Title III of the Federal Clean Air Act as Amended in 1990, emitted from all the paint booths. This list will be submitted in conjunction with the annual Base-wide emission inventory of HAPs submitted to the Division of Air Quality (DAQ).

E. The amounts of VOCs or HAPs reclaimed (if any) shall be quantified and subtracted from the quantities calculated above, to provide the monthly and annual total VOC emissions.

F. Records of consumption of VOC emitting materials used in painting operations at HAFB shall be kept for all periods when any painting operations are performed at the Base. Records of consumption shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

14. All sources of HAPs are subject to the Operating Permit Program if one of the following conditions is met:

A. The emissions of any one of the 189 HAPs listed in the 1990 Clean Air Act is over 10 tons/yr.

B. The emissions of any combination of these HAPs are over 25 tons/yr.

15. HAPs Reporting Criteria: HAFB is permitted to change the paint/solvent/thinner used in their painting operations without prior approval from DAQ, subject to the conditions listed in support document DAQE-068-95, dated January 30, 1995.

Miscellaneous

16. HAFB shall be permitted to use any of the paint booths (listed in Table 1 and Table 2, Condition #5) to perform any painting operation, provided that the booth manufacturer's operating specification and recommendations are complied with. HAFB is permitted to move any of the paint booths from its location given in Table 1 and Table 2 (Condition #5) to any other building location within the Base (Refer to Condition #1 for Base location). HAFB is required to submit a list of new locations for paint booths that have relocated during any calendar year, before March 31st of the following year. This AO shall then be revised by DAQ including the new locations of the paint booths in Table 1 and/or Table 2 in Condition #5.

17. All installations and facilities authorized by this AO shall be adequately and properly maintained. All pollution control vendor-recommended equipment shall be installed, maintained, and operated. Instructions from the vendor or established maintenance practices that maximize pollution control shall be used. All necessary equipment control and operating devices, such as pressure gauges, amp meters, volt meters, flow rate indicators, temperature gauges, etc., shall be installed and operated properly and

easily accessible to compliance inspectors. A copy of all manufacturers' operating instruction for pollution control equipment and pollution emitting equipment shall be kept on site. These instructions shall be available to all employees who operate the equipment and shall be made available to compliance inspectors upon their request.

18. The owner/operator shall comply with R307-1-3.5, UAC. This rule addresses emission inventory reporting requirements. The annual reporting requirements for compliance demonstration given in Condition #13 may be used as a guideline to comply with emission inventory reporting requirements. However, HAFB is required to submit any additional information in the appropriate format that may fulfill compliance with R307-1-3.5, UAC.

19. The owner/operator shall comply with R307-1-4.7, UAC. This rule addresses unavoidable breakdown reporting requirements. The owner/operator shall calculate/estimate the excess emissions whenever a breakdown occurs. The total of excess emissions shall be reported to the Executive Secretary as directed for each calendar year. For the paint booths, any excess particulate emissions resulting from the malfunction or breakdown of particulate control devices (filters, baghouses, etc.), shall be reported to the Executive Secretary for each calendar year, before March 31st of the following calendar year.

20. Under section 40 of the Code of Federal Regulations, Part 51, Subpart H (51.150 to 153), it is required that sources plan emergency measures based upon the severity of the Non-Attainment area in which they operate. In Utah, these rules require that CO sources in CO Non-Attainment areas and sources of Ozone precursors in Ozone Non-Attainment areas, who emit at least 25 tons per year (see SIP section VII.B.) of either pollutant, submit an Emergency Episode Plan which provides for additional pollution reductions in the event of an Air Pollution Alert, Warning or Emergency Episode. These plans can include total shut-down of the process. The plan shall identify what control/production measures the owner/operator shall implement when an emergency episode is declared by the Executive Director of the Department of Environmental Quality. Specific control/production measures shall be outlined for all three levels (Alert, Warning, Emergency). HAFB shall submit to the Executive Secretary an emergency plan within 60 days of the date of this AO. The values for the various levels are listed in R307-1-5, UAC. Also see 40 CFR, Part 51, Subpart H (40 CFR 51.150 to 153) and appendix L. The emergency plan shall be approved by the Executive Secretary. The Alert Level actions to be taken should be curtailment of all unnecessary activities causing air pollution. The other two levels of actions should be a progressive curtailment of production and activities causing pollution, to the point of complete shutdown of operations.

Any future modifications to the equipment approved by this order must also be approved in accordance with R307-1-3.1.1, UAC.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the UACR.

Annual emissions from all the paint booths listed in Table 1 and Table 2 (Condition #5) of this AO are currently calculated at the following values:

Pollutant		Tons/yr
A.	PM_{10}	0.60
B.	Total Suspended Particulate (TSP)	1.50
C.	VOC	201.20

These calculations are for the purposes of determining the applicability of prevention of significant deterioration (PSD) and nonattainment area major source requirements of the UACR. They are also to be used for purposes of determining compliance.

In accordance with the requirements of Title V of the 1990 Clean Air Act, the following pollutants may be subject to an operating permit fee. Both the fee rate and the class of pollutants are subject to change by State, the federal agencies, or both.

Pollutant		Tons/yr
A.	Total Suspended Particulate (TSP)	1.50
B.	VOC	201.20

In accordance with the requirements of Title V of the 1990 Clean Air Act, certain sources are subject to an operating permit fee. Both the fee rate and the class of pollutants are subject to change by State, the federal agencies, or both. As of the date of this Approval Order, sources with emissions of 10 tons per year or more of a single hazardous air pollutant, or sources with emissions of 25 tons per year or more of any combination of hazardous air pollutants, are subject to these operating permit fees. Hazardous air pollutants are determined to be any one of the 189 pollutants listed in the 1990 Clean Air Act Amendments, November 15, 1990. A list of these 189 pollutants is attached to this AO.

The paint booths listed in Table 1 and Table 2 (Condition 5) may be subject to Title V due to the emissions of hazardous air pollutants. Within 90 days of the date of this AO, HAFB shall submit a breakdown of their emissions categorized by chemical compound, with the annual emissions of each, listed in terms of weight. The list shall be submitted to:

Utah Division of Air Quality
Attn: Cheryl Heying - Manager, Operating Permits Section
150 North 1950 West
Salt Lake City, Utah 84114-4820

Approved By:

Russell A. Roberts, Executive Secretary
Utah Air Quality Board

UTAH DIVISION OF AIR QUALITY
NEW/MODIFIED SOURCE PLAN REVIEW

James R. Van Orman
Director of Environmental Management
Headquarters Ogden Air Logistics Center
Department of the Air Force
Hill Air Force Base, Utah 84056

RE:	Consolidation of all paint booths in Hill Air Force Base (HAFB) under a single Approval Order (AO) Davis County, CDS A1; NA
ENGINEER:	Arjun Ram
DATE:	November 8, 1994
INITIAL NOTICE OF INTENT DATED:	July 29, 1993
NOI COMPLETE DATE:	September 20, 1994
PLANT CONTACT:	Mr. Michael Graziano
PHONE NUMBER:	(801) 777-0359
FAX NUMBER	(801) 777-4306
PLANT LOCATION:	Hill Air Force Base, Utah
UTM COORDINATES:	455,000 m Northing 416,500 m Easting

FEES:

Filing Fee	$1,500.00
Review Engineer - 18 hours at $50.00/hour	$900.00
Modeler - XXXX hours at $50.00/hour	$000.00
Computer Usage Fee	$000.00
Travel - 00 miles at $0.23/mile	$000.00
Total	$2,400.00

APPROVALS:

Review Engineer KC 11/10/94

Engineering Unit Manager _____

Applicant Contact Made _____

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TYPE OF IMPACT AREA

Attainment Area	No
Nonattainment Area	
PM_{10}	No
SO_2	No
NO_X	No
CO	No
Ozone	Yes
NSPS	No
NESHAP	No
Toxic Pollutants	Yes
Toxic Major Source	Yes
New Major Source	No
Major Modification	No
PSD Permit	No
PSD Increment (modeling)	No
Send to EPA	Yes
Operating Permit program	Yes

FOR MODIFIED SOURCES

The Notice of Intent is for a modification to an existing source. The following standards apply in this review:

NSPS applies to modification?	NO
PSD review of entire source required?	NO
NESHAPS applies to modification?	NO
TOXICS involved in modification?	YES
TITLE V required for entire source?	YES
TOXIC MAJOR for modification?	NO
NONATT MAJOR for entire source?	YES

Abstract

This Approval Order (AO) consolidates the permit requirements for all paint booths at Hill Air Force Base (HAFB). This AO covers booths that are presently permitted. those that require permits (proposed booths and existing booths in operation), and grandfathered booths. The sum of the allowable VOC emissions from booths that are presently permitted is 201.2 tons per year. HAFB anticipates that no more that 201.2 tons per year of VOCs will be emitted out of all the paint booths at the base, including emissions from presently operating and permitted booths, booths operating without a permit, grandfathered booths, and future booths. HAFB will centrally monitor and manage the VOC emissions from the paint booths on the base. The following emissions are expected from the facility.

Volatile Organic Compounds (VOCs)	***201.2 tons per year***
Total Suspended Particulates (TSP)	***1.5 tons per year***
PM_{10}	***0.6 tons per year***

I. DESCRIPTION OF PROPOSAL

The proposal is to permit all the paint booths at Hill Air Force Base (HAFB) under a consolidated Approval Order (AO). The paint booths permitted under the proposed consolidated AO includes booths that are presently operating under a permit. booths that are operating without a permit, and booths that are grandfathered. HAFB has proposed a limit of 201.2 tons per year of VOC emissions from all these paint booths, including future booths. The total annual VOC emissions proposed by HAFB is the sum of the allowable emissions from the permitted paint booths, which is 201.2 tons per year. HAFB has proposed to centrally manage and monitor the VOC emissions from the numerous paint booths on the base. Allocation of these emissions will be based on the workloads and at the discretion of the Director of Environmental Management. Logs of paint usage will be maintained at each booth. These monthly paint logs will be submitted to the Directorate of Environmental Management which will calculate the VOC emissions from all the paint booths for the past 12-month period. The total emissions from all the paint booths located on the base shall not exceed 201.2 tons on a rolling 12-month basis. HAFB needs to use high VOC paints (VOC content greater that 3.5 pounds per gallon paint) for certain special painting operations. HAFB has requested that they be allowed to use 3,500 gallons of high VOC paint per year compared to 2,500 gallons per year that is allowed under the existing permit.

II. EMISSION SUMMARY

The emissions from this source will be as follows:

Pollutant	Current Emissions tons/year	Emission Increases tons/year	Total Emissions tons/year
Particulate	1.50	0.00	1.50
PM_{10}	0.60	0.00	0.60

VOC . . . . . 201.20 . . . . . 0.00 . . . . . 201.20

III. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ANALYSIS

VOC Destruction/Removal Technologies:

Several VOC destruction and removal technologies are available. These technologies include thermal incineration, catalytic incineration, and carbon adsorption. However, these technologies are not cost effective due to relatively low levels of VOC emissions from individual paint booths and also due to wide fluctuations in VOC flowrates.

Other Efforts to Reduce VOC Emissions

HAFB as a source has been voluntarily reducing VOC emissions by application of better technology. HAFB has converted 97% of its surface coating from high VOC paints to low VOC paints. Also, the use of High Volume Low Pressure (HVLP) spray guns has significantly improved transfer efficiency. At present 80% of all industrial painting operations utilize High Volume Low Pressure (HVLP) paint guns. The potential to use HVLP at the remaining 20% of the operations will be assessed and implemented as practical over the next 24 months. HVLP paint guns have a transfer efficiency of 65%. However, they are not usable in application of high-glossed or textured finishes and on small spherical or tight radius paths. HAFB uses cold cleaning facilities for cleaning paint guns. Approximately 60% of all paint booths have enclosed paint gun cleaners. At the present time, commercial paint gun cleaners are only available for pressure pot sizes less than 3 gallons. For pressure pots greater than 3 gallons, paint gun cleaners have been fabricated from old covered cold cleaning units. These units are not as efficient as commercial units. However, they are significantly better than uncontrolled gun cleaning.

IV. APPLICABILITY OF FEDERAL REGULATIONS AND UTAH ADMINISTRATIVE CODES (UAC)

This Notice of Intent is for consolidating permits of existing sources (paint booths) and including new sources (paint booths) in the consolidated permit. It is not a new major source or a major modification. The following federal regulations and state rules have been examined to determine their applicability to this Notice of Intent:

1. R307-1-3.1, UAC - Notice of Intent required for a new source, modified source, new piece of control equipment. This rule applies.

2. R307-1-3.1.5, UAC - Continuous program of construction required to begin within eighteen months of Approval Order date. If a continuous program of construction is not proceeding, the Executive Secretary may revoke the Approval Order.

3. R307-1-3.1.7 (A), UAC - A Notice of Intent is not required for natural gas fuel burning equipment with a rated capacity of less than 5 x 10^6 BTU per hour. Natural gas burning equipment is not involved in the project. This rule does not apply.

4. R307-1-3.1.7 (F), UAC - Notice of Intent not required for certain compounds that are not photochemically reactive. This list includes 1,1,1-trichloroethane. However, if the source is emitting more than 10 tons/yr of any compound, a Notice of Intent must be filed. This rule does not apply because non-photochemically reactive compounds are not emitted from the paint booths.

5. R307-1-3.1.8 (A), UAC - Application of best available control technology (BACT) required at all emission points. This rule applies.

6. R307-1-3.1.8 (C), UAC - Approval of the UAQB is required before the Executive Secretary can approve a source under Section 3.6.5 that consumes more than 50% of a PSD increment. This rule does not apply to this NOI because a PSD permit is not being issued.

7. R307-1-3.1.9, UAC - Rules for relocation of temporary sources. This source is a permanent source. Therefore, this rule does not apply.

8. R307-1-3.1.12, UAC - Requirement for installation of low-NO_x burners on all existing sources whenever existing fuel combustion burners are replaced, unless the replacement is not physically practical or cost effective. Burners are not involved in the project. This rule does not apply.

9. R307-1-3.2.1, UAC - Particulate emission limitations for existing sources that are located in a nonattainment area. This source is located in Davis County, which is an attainment area for particulates. Therefore, this rule does not apply.

10. R307-1-3.3.2, UAC - Review requirements for new major sources or major modifications that are located in a nonattainment area or which impact a nonattainment area. This Notice of Intent does not represent a new major source or a major modification. Therefore, this rule will not apply.

11. R307-1-3.3.3.B (3), UAC - Enforceable offset of 1:1 required for new sources or modifications that would produce an emission increase greater than or equal to 25.00 tons per year but less than 50 tons per year of any combination of PM_{10}, SO_2, and NO_x. This is required in Salt Lake, Davis, and Utah Counties and in any area that affects these three counties as defined in the rule. The effective date is November 15, 1990. Note: see R307-1-3.3.3.C on offset for ozone nonattainment area restrictions. Among the pollutants stated in this rule, only PM_{10} is emitted. There are no increase in PM_{10} emissions from this project. Therefore, this rule does not apply.

12. R307-1-3.5, UAC - Emission inventory reporting requirements. This rule requires any source that emits 25 tons or more per year of any pollutant or any Part 70 source to submit an emission inventory to the Division of Air Quality every year or as determined necessary by the Executive Secretary. This source must comply with this rule.

13. R307-1-3.6.3, UAC - PSD Increment Consumption - This rule lists the allowable PSD increment consumption. Under the PSD rules, the entire state has been triggered for TSP, SO_2, and NO_x. The allowable increments are as follows:

TSP ($\mu g/m^3$)

	Three Hour	24 Hour	Annual
Class I Area		**10**	**5**
Class II Area		**37**	**19**

SO_2 ($\mu g/m^3$)

Class I Area	**25**	**5**	**2**
Class II Area	**512**	**91**	**20**

NO_x ($\mu g/m^3$)

Class I Area	**2.5**
Class II Area	**25**

There are also Class III increments, which do not apply in Utah. The above increments apply at all locations, unless the area is already nonattainment. The entire increment may not be available at all locations due to previously permitted sources consuming increment. The paint booths are located in a non-attainment area. Therefore PSD increment consumption is not an issue.

Modeling analysis is not routinely performed for air pollution sources with emissions below the following levels:

Criteria for Screen Modeling
($\geq$ Tons per Year)

	Nonattainment Areas	Attainment Areas
TSP	10	10
PM_{10}	5	5
SO_2	10	20
NO_2	20	20
CO	25	50

VOC	10	20
O_3	5	5

VOC emissions from the source is 201.2 tons per year, and according to the above guidelines, Screen modeling was required to be performed for VOC emissions. However, no allowable emission increases are involved in this project. The total VOC emissions of 201.2 tons per year allowed by this project has already been allowed by existing permits. Therefore, Screen modeling was not performed for VOC emissions.

Screen modeling was performed to evaluate the effect of toxic emissions from the paint booths. Certain critical paint booths (paint booths that were close to the fence line and paint booths that have maximum emission rates of air toxics) were chosen for screen modeling. The maximum concentrations of air toxics at the fence line as obtained from Screen modeling were well within the Division of Air Quality's guideline, which is Threshold Limit Value (TLV)/100 for non-carcinogens, and TLV/300 for suspected or confirmed carcinogens (according to American Association of Governmental and Industrial Hygienists handbook, 1993-94).

14. R307-1-3.6.5 (b), UAC - Prevention of significant deterioration (PSD) review requirements for new major sources or major modifications. This Notice of Intent does not represent a new major source or a major modification under PSD rules. Therefore, this rule does not apply.

15. R307-1-3.8, UAC - Stack height rule. This rule limits the creditable height of stacks to that height determined to be good engineering practice. The formulas used to determine good engineering practice are found in 40 CFR 51.100. A de minimis height of 65 meters (213.2 feet) is allowed. The paint booths have no stacks that exceed 65 meters in height. It is in compliance with this rule.

16. R307-1-3.11, UAC - Visibility screening analysis requirements. This rule requires all new major sources or major modifications to undergo a visibility screening analysis to determine visibility impact on any mandatory Class I area. This Notice of Intent does not represent a new major source or a major modification under UACR rules. Therefore, this rule does not apply.

17. R307-1-4.1.2, UAC - 20% opacity limitation at all emission points. Unless a more stringent limitation is required by New Source Performance Standards (NSPS) or BACT or National Emission Standards for Hazardous Air Pollutants (NESHAPS). In this case, an opacity limitation of 10% is recommended as BACT.

18. R307-1-4.1.9, UAC - EPA Method 9 shall be used for visible emission observations. This rule applies.

19. R307-1-4.6, UAC - Continuous Emission Monitoring Systems Program - Reporting and technical requirements for continuous emission monitoring systems. It covers

breakdowns and quarterly reports for continuous monitoring systems. Section 4.6.5 states that this regulation applies to the following:

A. Sources required to install CEMS as required by the following documents:

1) NSPS
2) State Implementation Plan
3) Approval Order
4) Consent Decree
5) Administrative Orders and Agreements

This source is not required to install CEMS by any of the above documents.

B. Any source that constructs after the promulgation of this rule two or more emission points, which may interfere with VEO's, shall install an opacity monitor on each stack. The stacks do not interfere with VEOs and therefore, an opacity monitor is not required on any stacks connected to the paint booths.

20. R307-1-4.7, UAC - Unavoidable breakdown reporting requirements. This rule applies. Section 4.7.1 discusses reporting requirements. A breakdown for any period longer than two hours must be reported to the Executive Secretary within three hours of the beginning of the breakdown, if reasonable, but in no case longer than 18 hours after the beginning of the breakdown. A written report is required within seven calendar days. The report shall include the estimated quantity of pollutants (total and excess). Section 4.7.2 discusses penalties.

21. R307-1-4.9, UAC - Review requirements for volatile organic compound (VOC) sources located in a nonattainment area for ozone <u>constructed in 1980 or earlier</u>. This rule covers the following processes:

A. Section 4.9.1 - Petroleum liquid storage

B. Section 4.9.2 - Gasoline transfer/storage

C. Section 4.9.3 - Control of hydrocarbon emissions in refineries

1) Vacuum producing systems
2) Wastewater separators
3) Process unit turnaround
4) Catalytic cracking units
5) Safety pressure relief valves
6) Leaks from petroleum refinery equipment

D. Section 4.9.4 - Degreasing and solvent cleaning operations

1) Cold cleaning facilities
2) Open top vapor degreasers
3) Conveyorized degreasers

E. Section 4.9.5 - Cutback asphalt

F. Section 4.9.6 - VOC used for various processes

1) Section 4.9.6(A) - General Provisions

2) Section 4.9.6(B) - Paper Coating

3) Section 4.9.6(C) - Fabric and Vinyl Coating

4) Section 4.9.6(D) - Metal Furniture Coating VOC Emissions

5) Section 4.9.6(E) - Large Appliance Surface Coating VOC Emissions

6) Section 4.9.6(F) - Magnet Wire Coating VOC Emissions

7) Section 4.9.6(G) - Flat Wood Coating

8) Section 4.9.6(H) - Miscellaneous Metal Parts and Products VOC Emissions

9) Section 4.9.6(I) - Graphic Arts

10) Section 4.9.6(J) - Exemptions

11) Section 4.9.6(K) - Capture Systems

12) Section 4.9.6(L) - Testing and Monitoring

G. Section 4.9.7 - Perchloroethylene Dry Cleaning Plants

H. Section 4.9.8 - Compliance Schedule

This rule applies only in Salt Lake and Davis Counties. The paint booths are located in Davis County. Therefore, this rule applies.

Section 4.9.4 for Degreasing and Solvent Cleaning Operations applies to the solvent gun cleaning operations. HAFB uses cold cleaning facilities for cleaning paint guns. Approximately 60% of all paint booths have enclosed paint gun cleaners. At the present time, commercial paint gun cleaners are only available for pressure pot sizes less than 3 gallons. For pressure pots greater than 3 gallons, paint gun cleaners have been fabricated from old covered cold cleaning units. These units are not as efficient

as commercial units. However, they are significantly better than uncontrolled gun cleaning. HAFB is required to comply with the provisions of Section 4.9.4 for its Cold Cleaning Facilities.

4.9.6.H for Miscellaneous Metal Parts and Products VOC emissions apply to the painting operations in the paint booths. However, Section 4.9.4.H (1)(h)(3) states that this regulation does not apply to the exterior of airplanes. For painting the exterior of airplanes, HAFB would otherwise have been subject to comply with 4.9.6.H.(2)(b), which states that:

"No owner or operator of a facility engaged in the surface coating of miscellaneous metal parts and products may cause, allow or permit discharge to the atmosphere of any volatile organic compounds in the excess of 0.42 kilograms per liter (3.5 pounds per gallon) of coating, excluding water and solvents exempt from the definition of volatile organic compound, delivered to a coating applicator in a coating application system that utilizes air or forced warm air at temperatures up to 90 degrees C (140 degrees F).

The painting operations in the booths are not restricted to painting the exterior of aircrafts. HAFB is required to comply with 4.9.6.H(2)(b) for painting parts other than the exterior of aircrafts, subject to the following exemptions:

1. Specific painting operations at HAFB for which Low VOC paints (less than 3.5 pounds VOC per gallon paint) are not commercially available.

2. Painting operations that require high VOC paints (greater than 3.5 pounds of VOC per gallon paint) because of performance specifications or corrosion control requirements.

Exemption from complying with 4.9.6.H for painting of parts other than the exterior of aircraft was granted by DAQ on August 6, 1991 (DAQE-548-91). The exemption which permits HAFB to use 2,500 gallons of high VOC paint per year was granted in response to a request by HAFB, dated April 2, 1991. Also, HAFB has made a voluntary effort to reduce VOC emissions from painting operations that are exempt from having to comply with 4.9.6.H, by shifting to the usage of low VOC paints where possible. HAFB has requested that they be allowed to use 3,500 gallons of high VOC paint per year, compared to 2,500 gallons of high VOC paint per year that the base is presently allowed to use. This increase in allowable high VOC paint usage is justified because the overall emissions from the base would still fall within the presently permitted 201.2 tons VOC per year. Moreover, HAFB as a source has been voluntarily reducing VOC emissions by application of better technology. HAFB has converted 97% of its surface coating from high VOC paints to low VOC paints. Also, the use of High Volume Low Pressure (HVLP) spray guns has significantly improved transfer efficiency. Presently, HAFB and the paint industry are working together to find low VOC substitutes for those applications that still require high VOC paints. In view of the HAFB's efforts to reduce VOC emissions from the painting

operations, it is proposed that, in the consolidated permit, HAFB be allowed to use 3,500 gallons of high VOC paint per year, and still be subject to an overall emissions limit of 201.2 tons VOC per year from all the painting operations at the base.

22. R307-1-4.10, UAC - Abrasive Blasting Requirements - Opacity limitations and performance standards for abrasive blasting - Abrasive blasting is not involved in this project. Therefore, this rule does not apply.

23. R307-1-5, UAC - Emergency episode requirements. This rule requires the Executive Secretary to determine the stage and extent of an air pollution episode based on pollution levels and meteorological conditions. Under section 40 of the Code of Federal Regulations, Part 51, Subpart H (51.150 to 153), it is required that sources plan emergency measures based upon the severity of the Non-Attainment area in which they operate. In Utah, these rules require that CO sources in CO Non-Attainment areas and sources of Ozone precursors in Ozone Non-Attainment areas, who emit at least 25 tons per year (see SIP section VII.B.) of either pollutant, submit an Emergency Episode Plan which provides for additional pollution reductions in the event of an Air Pollution Alert, Warning or Emergency Episode. These plans can include total shut-down of the process. (Some sources are required to submit an emergency episode plan in the PM_{10} SIP). This rule applies.

24. 40 CFR, Part 60 - New Source Performance Standards (NSPS) - There is no NSPS for this industrial process.

25. 40 CFR, Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAP) - There is no NESHAP for this industrial process.

26. 40 CFR, Part 50 - National Ambient Air Quality Standards (NAAQS) - This source is located in Davis County, which is a nonattainment area for ozone.

    This source contributes to an existing violation of the ozone NAAQS but does not cause a new violation. The total allowable VOC emissions under the consolidated permit is 201.2 tons per year, which is the sum of the VOC emissions allowed for the paint booths in operation at HAFB, under their respective permits.

27. 40 CFR 60.18, General Control Device Requirements. These requirements apply to NSPS that refer to this section. It specifically covers flares. No flares are involved in this project. Therefore, this rule does not apply.

28. 40 CFR 60.14, Definition of Modification - Any physical or operational change to an existing facility that results in an increase in the emission rate to the atmosphere of any pollutant to which an NSPS standard applies. This project does not involve an increase in emissions. Therefore, this notice of intent is not a modification according to this rule.

Also see R307-1-1 (Modification), which is the State's definition. It is a planned increase in emissions. This Notice of Intent is not a modification because no increase in emissions result from this project.

29. 40 CFR 60.15, Definition of Reconstruction - the replacement of components of an existing facility to such an extent that:

    1) The fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility and

    2) It is technologically and economically feasible to meet the applicable standards set forth in this part

    This Notice of Intent is not a reconstruction.

30. R307-1-1, Definition of Major Modification - It means any physical change in or changes in the method of operation of a major source that would result in a significant net emission increase of any pollutant. A net emissions increase that is significant for VOC shall be considered significant for ozone. This Notice of Intent is not a major modification.

31. 40 CFR 80.29, Controls and Prohibitions on Diesel Fuel Quality - Diesel fuel is not used in this project. Therefore, this rule does not apply.

RECEIVED
SEP 23 1994
Air Quality

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

20 Sep 1994

OO-ALC/EME
7274 Wardleigh Road
Hill AFB, UT 84056-5127

Mr Arjun Ram, Permitting Engineer
Division of Air Quality
1950 West North Temple
PO Box 144820
Salt Lake City, UT 84114-4820

Re: Hill AFB Consolidated Permit Application for Paint Booths

Dear Mr. Ram

Attached are our comments regarding the Proposed Consolidated Permit for Paint Booths at Hill Air Force Base, dated May 10, 1994. These comments include those that were discussed at our 15 Jun 94 meeting as well as updates to the list of booths.

I apologize for the delay in returning these comments to you. However, we were actively involved in the comment and public hearing process of the Aerospace Industries - Surface Coating NESHAP. It was our intent to assure there were not any major inconsistencies between the NESHAP and the consolidated permit. Even though the NESHAP has yet to be promulgated, we recommend that this permit not be delayed any further. Whatever modifications that may result from the NESHAP will only involve a portion our paint booths and we are assuming can be addressed at a later time.

We appreciate your patience and assistance in this matter. Please contact Michael Graziano at 777-0359 if you have any questions or wish to discuss this matter further.

LYNN S. HILL
Ch, Environmental Compliance Division

Atch
Consolidated Paint Booth Permit Comments

CONSOLIDATED PAINT BOOTH PERMIT

COMMENTS

1. PAGE 13, # 3, Include the submittal date of these comments. Change to read as follows;

Hill Air Force Base shall install and operate the Paint Booths according to the information submitted in the Notice of Intent dated July 29, 1993, and additional information submitted to the Executive Secretary dated January 12, 1994, February 14, 1994, May 4, 1994, and 1 Sep 1994.

2. Page 14, #5, Include several portable booths used when painting portions of the C-130. Change to read as follows;

The approved installations shall consist of the paint booths listed in Table 1 and Table 2, which are given below. This approval order is also applicable to several portable, custom built, paint booths which are used to paint sections of aircraft that are typically unaccessible during normal painting operations. The conditions in this approval order that are applicable to individual paint booths shall apply to each of the paint booths listed in Table 1 and Table 2, unless indicated otherwise. The information provided in Table 1 and Table 2 about the characteristics of each paint booth is only to be used to identify the booths and the stacks. Data about the manufacturer, Design Flowrate, Type of particulate control device and Stack Configuration have been provided in the tables for information purposes only.

3. Page 17, #8, Modern paint systems do not require thinners or solvents be added. They come pre-mixed or in pre-proportioned kits. The VOC content specified for a particular coating is determined from the "as applied" mixture. Change this paragraph by removing the words thinner or solvent on the section that appears on page 17. OK to have it

4. Page 18, #8, With item 3 above in mind the only solvents and thinners that would be unaccounted for are those that are consumed during clean up operations. At the present time there is no requirement to track usage of clean up materials. It should be noted that Hill AFB is currently installing commercial paint gun washers in many of the booths. If used properly emissions from this source are virtually eliminated. Therefore it is requested that the requirement for computing emissions from commercial paint gun washers be eliminated. Change this section of paragraph to read as follows;

> VOC emissions from solvents and thinners consumed during clean up, in other than commercial paint gun washers, shall be determined as follows:

$$\text{VOC Emissions (Tons)} = \frac{\text{Density (lbs/gal)} * \text{(gallons of thinner or solvent consumed)}}{2{,}000 \text{ lb/ton}}$$

the amount consumed is defined as the volume of clean material input into the process less the volume of material captured at the end of process for reuse, recycle, or disposal.

5. Page 18, #11, This paragraph should address all instances of open air spraying. Change to read as follows;

Hill Air Force Base shall be permitted to paint (touch up) up to a maximum of 10 square feet area on any component or aircraft outside of the paint booths specified in Table 1 and Table 2 (Condition #5), within the base (refer to condition #1 for Base location). The following two situations are exemptions to this condition.

a. The use of 150 gallons of high and 100 gallons of low VOC paint at the Hill Air Force Base Museum in accordance with DAQE-461-92.

b. The use of up to 200 gallons of paint per year for touch up painting associated with the C-130 program.

Records shall be maintained on the amount of paint used for such "touch up" painting operations, and the resulting emissions (determined according to the procedure described in condition #8) shall be accounted for in the rolling 12-month VOC emissions limit of 201.2 tons per year from all painting operations at Hill Air Force Base.

6. Page 19, #13, Make reporting requirements more in line with data currently available. Change to read as follows;

Hill Air Force Base shall centrally manage and monitor the VOC emissions from all the paint booths (specified in Table 1 and Table 2, Condition #5). The VOC emissions from the paint booths shall, be determined according to the method described in Condition #8. For each calendar year (January 1st to December 31st), Hill Air Force Base shall submit to the Executive Secretary the following information: [illegible]

A. A list of paints used in quantities of greater than or equal to 1% of the base wide total for paint usage. This list will identify paint type, quantity, and VOC content in pounds/gallon. Also included as part of this list will be a MSDS for each of the listed paints.

B. A list of thinners, solvents, and chemical compounds, consumed in clean up operations as defined in Condition #8. This list will identify material type, quantity, and VOC content in pounds/gallon. Also included as part of this list will be a MSDS for each of the items listed.

C. An inventory of all paint booths with the monthly totals of all VOCs emitted from paint and thinners/solvents. These monthly totals will be summed to give an annual quantity of paints and thinners/solvents. This list will also be used to update the status of all booths located at Hill Air Force Base.

D. The total amounts of each Hazardous Air Pollutant (HAP), as defined in Title III of the Federal Clean Air Act as amended in 1990, emitted from all paint booths. This list will be submitted in conjunction with the Annual Base wide Inventory of Hazardous Air Pollutants submitted to the DAQ.

Condition E & F are required

7. Page 20, # 15.A., Change to read as follows;

If Hill Air Force Base intends to change the rates and/or chemical composition of non-criteria pollutant emissions from those submitted as a part of the Notice of Intent for this Approval Order, Screen modeling is required to be performed by Hill Air Force Base, using TLV/100 for non-carcinogens or TLV/300 for suspected or confirmed carcinogens, as the ambient standard. If the Risk Index (defined in D. below) exceeds the following concentrations of these compounds, a Notice of Intent shall be filed in accordance with Section 3.1, UACR;

a. Methyl Ethyl Ketone

non-Carcinogen — TLV=590 mg/m^3
TLV/100=5.90 mg/m^3

b. Methyl Isobutyl Ketone

non-carcinogen — TLV=205 mg/m^3
TLV/100=2.05 mg/m^3

Turn over for Risk Index Calculations

c. Xylene

non-Carcinogen — TLV=435 mg/m^3
TLV/100=4.35 mg/m^3

d. Toluene

non-Carcinogen — TLV=375 mg/m^3
TLV/100=3.75 mg/m^3

e. Ethyl Benzene

non-Carcinogen — TLV=435 mg/m^3
TLV/100=4.35 mg/m^3

8. Page 14, Table 1

Delete 238 (34407) from the table. This is a new booth and is already listed in Table 2.

9. Page 16, Table 2, change as follows;

a. Bldg 48 (3649) change to Bldg 48 (3650)

b. Delete the following

Bldg 220 (3118)
Bldg 220 (3978)
Bldg 220 (3073)

Add the following;

Bldg (AQUIS #)	Manufacturer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
220 (3982)	DeVilbiss	25,200	Water Fall	6 @ 36"

This one AQUIS # will be used to consolidate the three booths to be deleted from above.

c. Delete Bldg 265 (3402), this building has been demolished.

d. Delete the three booths in bldg 266; AQUIS numbers 3838, 3839, and 3840. They have been taken out of service and the building will be demolished by October 94.

e. Make the following changes to Bldg 590 (3929)

Bldg (AQUIS #)	Manufacturer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
590 (3929)	Protectaire	6,000	Water Fall	36"

f. Include the following additional information for building 509

Bldg (AQUIS #)	Manufacturer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
509 (34901)	DeVilbiss	18,200	Water Fall	40"
509 (34902)	DeVilbiss	18,200	Water Fall	40"

g. Include the following information regarding four portable booths (enclosures) used to paint sections of the C-130.

Bldg (AQUIS #)	Manufacturer	Design Flowrate (CFM)	Type	Stack Diameter (inches)
Portable A (34903)	Custom	1,360	Dry Filter	8"
Portable B (34904)	Custom	1,360	Dry Filter	8"
Portable C (34905)	Custom	1,360	Dry Filter	8"
Portable D (34906)	Custom	1,360	Dry Filter	8"

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

14 Feb 1994

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Hill AFB, Ut 84056-5127

Mr Arjun Ram, Permitting Engineer
Division of Air Quality
1950 West North Temple
PO Box 144820
Salt Lake City, UT 84114-4820

Re: Hill AFB Consolidated Permit Application for Paint Booths (Hill AFB ltrs 20 July 93 and 5 Jan 94; and mtg 7 Jan 94)

Dear Mr. Ram

This letter is to submit the paint usage data you requested during our 7 Jan 94 meeting. Specifically, you requested a list of those paints that were used in excess of 1% of the total paint usage at Hill AFB. The attached list gives the National Stock Number (NSN), Description, and quantity in ounces. Please note that even though there are 13 separate paints identified, nine of them are polyurethane. Additionally, I suggest the following reporting requirement be incorporated into the proposed consolidated paint booth permit;

> "During January of each year the base shall report the total quantity of paints used during the just completed calendar year and identify those that were used in excess of 1% of the total. Additionally the base shall provide to the DAQ an MSDS for each paint that appears on the 1% or greater list."

If you have any questions regarding this matter, please do not hesitate to contact Mike Graziano at 777-0359.

LYNN S. HILL
Chief, Env Compliance Div.

2 Attachments
1. 1% or Greater List
2. MSDS's for 13 Paints

Total Paint consumption CY 93 is 3,097,341.33 ounces which is 24,198 gallons.

Report those paints which exceed 1% of the total, ie. 30,973 ounces

For this report identify all paints (Search for Common Stock Numbers) used in excess of 30,000 ounces.

NSN	Descrip	Ounces
1. 8010012137898 8557	Koroflex Primer Yellow	320,294.40
2. 8010012659143 33461 A	Polyurethane White	21,639.35
8010012659143 33461 B		41,137.06
3. 8010012659151 33461 A	Polyurethane Paint	56,197.65
8010012659151 33461 B		6,648.01
4. 8010012853554 33461 A	Polyurethane Paint	42,560.97
8010012853554 33461 B		32,600.79
5. 8010013055551 33461 A	Polyurethane Paint	766,690.32
8010013055551 33461 B		188,603.29
6. 8010013121169 85570 A	Epoxy Paint	188,804.18
8010013121169 85570 B		26,790.17
7. 8010013226622 33461 A	Polyurethane Paint	26,751.01
8010013226622 33461 B		5,456.37
8. 8010013226623 33461 A	Polyurethane Paint	34,560.00
8010013226623 33461 B		28,416.00
9. 8010013443218 33461 A	Polyurethane Paint	55,554.00
8010013443218 33461 B		9,904.00
10. 8010013456535 33461 A	Polyurethane Paint	153,496.00
8010013456535 33461 B		92,688.00
11. 8010L00006F 85570 A	Waterborne Primer	44,728.32
12. 8010P400017F 85570 A	Fast Dry Paint	176,576.00
13. 8010P887670F 33461 A	Polyurethane	22,808.32
8010P887670F 33461 B		6,949.77
	TOTAL	2,349,853.98

THIS TOAL REPRESENTS APPROXIMATELY 75% OF ALL PAINT USED AT HILL AFB

[illegible] low VOC (approx [illegible] gal / [illegible] gal
[illegible] low VOC paint (request
[illegible]

E

MATERIAL SAFETY DATA SHEET

Item Name	POLYESTER KOROFLEX PRIMER 823X439
Part Number/Trade Name	KOROFLEX PRIMER, YELLOW, 823X439
nal Stock Number	8010012137898
Code	85570
Part Number Indicator	A
Manufacturer Name	COURTAULDS AEROSPACE
Street	1608 4TH STREET
City	BERKELEY
State	CA
Zip Code	94710
Emergency Phone	800-228-5635 INFO 818-549-7823
Information Phone	818-349-7823
Date MSDS Prepared/Revised	08MAY92
Specification Number	N/R
Appearance/Odor	LIQUID,SOLVENT ODOR V.O.C. GR/L:582 AS APPLIED
Boiling Point	175-313 F
Specific Gravity	1.05
Evaporation Rate	SLOW
Flash Point	22 F
Flash Point Method	SETAFL
Lower Explosive Limit	1.1
nguishing Media	EXTINGUISHERS (CARBON DIOXIDE,DRY CHEMICAL OR FOAM).
cial Fire Fighting Procedures	WATER SPRAY MAY BE INEFFECTIVE.COOL FIRE EXPOSED CONTAINERS W/WATER. FOG NOZZLES ARE PREFERRABLE. WEAR NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS &
Unusual Fire/Explosion Hazards	VAPORS MAY ACCUMULATE IN INADEQUATELY VENTILATED OR CONFINED AREAS. VAPORS MAY FORM EXPLOSIVE MIXTURES W/AIR. VAPORS MAY TRAVEL LONG DISTANCES. FLASHBACK OR FLT
Stability	YES
Stability Conditions to Avoid	TEMPERATURES ABOVE MAXIMUM STORAGE TEMPERATURES DO NOT STOREABOVE 49 C (120 F)
Materials to Avoid	AVOID CONTACT W/WATER, ALCOHOLS AND AMINES
Hazardous Decomposition Products	CARBON MONOXIDE AND CARBON DIOXIDE, OXIDES OF NITROGEN AND TRACES OF HCN AND ISOCYANATE MONOMER
LD50 - LD50 Mixture	N/R
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	MAY CAUSE NASAL & RESP IRRITATION ASPHYXIATION MAY RESULT FROM BREATHING OXYGEN DEFICIENT AIR. MAY CAUSE ALLERGIC SENSITIZATION.MAY CAUSE IRRITATION, DEFATTING OR DERMATITIS OF THE SKIN.
Carcinogenity: NTP	YES
Carcinogenity: IARC	YES

Carcinogenity: OSHA.....	YES
Symptoms of Overexposure.....	CNS DEPRESSION CHARACTERIZED BY HEADACHE, DIZZINESS, STAGGERING,CONFUSION OR UNCONSIOUSNESS MAY CAUSE ALLERGIC SENSITIZATION CHAI NUCOUS MEMBRANE IRRITATION, TIGHTNESS CHEST, IRRITATIONOF THE RESPIRATORY TRACK, COUGHING AND SHORTNESS OF BREATH. MAY
Medical Cond. Aggrevated by Exposure...	PRE-EXISTING SKIN, LUNG, AND EYE CONDITIONS.
Emergency/First Aid Procedures.....	INHALATION:REMOVE TO FRESH AIR FROM EXPOSURE. GIVE ARTIFICIAL RESP OR CARDIOPULMONARY RESUSCITATION(CPR)IF REUQIRED. IF BREATHING IS DIFFICULT GIVE OXYGEN. KEEP WARM & QUIET. GET MEDICAL ATTENT. SKIN:WASH AFFECTED AREAS W/SOAP & WATER. DO NOT USE SOLVENTS. REMOVE CONTAMINATED CLOTHING & WASH BEFORE REUSE. GET MEDICAL ATTENT. EYE:FLUSH W/WATER 15 MIN. GET MEDICAL ATTENT PREFERRABLY FROM AN OPTHALM.
Steps if Material Released/Spilled.....	DEPENDING ON QUANTITY & CIRCUMSTANCES,AN UNAUTHORIZED RELEASE OF THIS MATERIAL TO THE ENVIRON MAY BE REPORTABLE UNDER FEDERAL LAW TO THE NATIONAL RESPONSE CENTER. STATE & LOCAL GOV. AGENCIES MAY ALSO HAVE REPORTING REQUIREMENTS OF WHICH YOU SHOULD. A
P iratory Protection.....	IN AREAS WHERE TLVS MAY BE EXCEEDED OR IF SPRAY MIST IS PRESENT, USE NIOSH/I APPROVED RESPIRATORY PROTECTION APPROPRIATE FOR INDICATED COMPONENTS.
Ventilation.....	GENERAL DILUTION OR LOCAL EXHAUST VENTILATION TO KEEP LEVELSBELOW RECOMMENDED LIMIT.
Protective Gloves.....	CHEMICAL RESISTANT
Eye Protection.....	SAFETY W/SIDE SHIELDS OR GOGGLES
Supplemental Health/Safety Data.....	1ST AID: INHAL:REMOVE TO FRESH AIR. GIVE ART RESP/CPR OR OXYGEN IF REQUIRED. KEEP WARM & QUITE. GET MD ATTN. SKIN:WASH AREA W/SOAP & WATER. DO NOT USE SOLVENTS. WASH CLOTHING BEFORE REUSE. GETMD ATTN. EYE:FLUSH FOR 15 MINS, GET MD ATTN. INGEST:GET MD ATTN

Ingredient #.....	00
Ingredient Name.....	METHYL N-AMYL KETONE
CAS Number.....	110-43-0
NIOSH Number.....	N/R
Proprietary.....	NO
Percent.....	10
ACGHIH TLV.....	50 PPM

edient #.....	002
Ingredient Name.....	METHYL ETHYL KETONE
CAS Number.....	78-93-3
NIOSH Number.....	N/R
Proprietary.....	NO

Percent..... 35
ACGHIH TLV..... 200 PPM

Ingredient #..... 00
Ingredient Name..... POLYERIC URETHANE RESIN
CAS Number..... 51855-41-5
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 25
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 04
Ingredient Name..... STRONTIUM CHROMATE
CAS Number..... 7789-06-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... .05 MG/M3

Ingredient #..... 05
Ingredient Name..... CYCLOHEXANONE
CAS Number..... 108-94-1
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 15
ACGHIH TLV..... 25 SKIN PPM

Ingredient #..... 06
Ingredient Name..... ETHYLENE BISPHENYL ISOCYANATE
CAS Number..... 101-68-8
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... .005 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

Item Name	POLYURETHANE
Number/Trade Name	MIL-C-85285B, 17925, TYPE II
onal Stock Number	8010012659143
Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT,INC.
Street	17451 VON KARMEN AVE.
City	IRVINE
State	CA
Country	US
Zip Code	92714
Emergency Phone	714-474-0400
Date MSDS Prepared/Revised	092393
Specification Number	MIL-C-85285B
Appearance/Odor	WHITE LIQUID WITH SOLVENT ODOR.
Boiling Point	175 DEG F
Specific Gravity	1.37
Flash Point	23 DEG F
Lower Explosive Limit	1.0%
Extinguishing Media	FOAM, ALCOHOL FOAM, DRY CHEMICAL, WATER FOG.
Special Fire Fighting Procedures	FULL FIRE FIGHTERS EQUIPMENT WITH SELF CONTAINED BREATHING APPARATUS AND FU PROTECTIVE CLOTHING SHOULD BE WORN E FIRE FIGHTERS. WATER MAY BE USED TO COOL CON
Unusual Fire/Explosion Hazards	EXPLOSIVE HAZARD UNDER FIRE CONDITIONS OR PRESSURE BUILD UP
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES, SPARKS AND OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	CARBON DIOXIDE, CARBON MONOXIDE AND OXIDES OF NITROGEN
LD50 - LD50 Mixture	N/R
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	VAPORS ARE IRRITATING TO EYES, NOSE AND THROAT. INHALATION MAY CAUSE HEADACHE, DIFFICULT BREATHING AND LOSS OF CONCSCIOUSNESS. PROLONGED CONTACT WILL CAUSE DRYING AND CRACKING OF THE SKIN, DUE TO DEFATTING ACTION. SKIN SENSITIZATION, ASTHMA OR OTHER ALLE
Carcinogenity: NTP	NR
Carcinogenity: IARC	NR
Carcinogenity: OSHA	NR
toms of Overexposure	INHALATION; IRRITATION OF THE RESPIRATORY TRACT.AND ACUTE NERVOUS SYSTEM DEPRESSION,FOLLOWED BY HEADACHE,DIZZINESS, STAGGERING GAIT, CONFUSION,UNCONSCIOUSNESS OR COMA.SKIN AND EYE CONTACT; IRROTATION. INGESTION;

	MAY CAUSE CORROSION TO THE MOUTH AND STOMAC
Medical Cond. Aggrevated by Exposure...	SWELLING , REDNESS, AND RASH MAY CAUSE HEADACHE, DIZZINESS, STAGGERING GAIT, CONFUSION, UNCONSCIOUSNESS OR EVEN COMA. MAY CAUSE DEFATTING OF SKIN.
Emergency/First Aid Procedures.....	EYES.= FLUSH WITH WATER FOR 15 MIN LIFT EYE LIDS OCCASIONALY FOR GOOD CLEANING. SKIN.= FLUSH WITH WATER,THEN WASH WITH SOAP AND WATER. INHALATION.= REMOVE TO FRESH AIR, GIVE MEDICAL ATTENTION IF NEEDED. INGESTION.= CALL PHY IMMEDIATELY ON ANY CASE OF OVEREXPOSURE.
Steps if Material Released/Spilled.....	REMOVE IGNITION SOURCES, COVER WITH INERT MATERIAL. REMOVE AND PLACE INTO CONTAINER FOR DISPOSAL.
Waste Disposal Method.....	DISPOSE OF IN ACCORDANCE TO ALL STATE AND FEDERAL REGULATIONS.
Handling & Storage Precautions.....	STORE AWAY FROM ALL IGNITION SOURCES,
Respiratory Protection.....	USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED, USE AIR PURIFYING OR FRESH AIR SUPPLY
Ventilation.....	EXHAUST VENTILATION TO MAINTAIN TLV AT RECOMMENDED LEVELS
Protective Gloves.....	NEOPRENE, RUBBER, POLYETHYLENE GLOVES
Eye Protection.....	USE SAFETY GLASSES OR GOGGLES
Work Hygenic Practices.....	WASH WITH SOAP AND WATER AFTER HANDELING ANY CHEMICAL.
Supplemental Health/Safety Data.....	INHALATION; REMOVE TO FRESH AIR. SKIN CONTACT; WASH AFFECTED AREAS WITH SOAP AND WATER, REMOVE CONTAMINATED CLOTHING.=EYES=FLUSHWITH WATER FOR 15 MIN, LIFTING EYE LIDS TO FLUSH. INGESTION;= DO NOT INDUCE VOMITING, CALL PHYSICIAN. CALL PHYSICIAN ON ANY C

Ingredient #.....	01
Ingredient Name.....	METHYLENE ETHYL KETONE
CAS Number.....	78-93-3
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	20%
ACGHIH TLV.....	200 PPM

Ingredient #.....	02
Ingredient Name.....	METHYL ISOBUTYL KETONE
CAS Number.....	108-10-1
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	10%
ACGHIH TLV.....	50 PPM

Ingredient #.....	03
Ingredient Name.....	PMGE ACETATE
CAS Number.....	108-65-6
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	0.1 %
ACGHIH TLV.....	NR

Ingredient #..... 04
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
[illegible] Number..... NR
Proprietary..... NO
Percent..... 0.1%
ACGHIH TLV..... 100 PPM

Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
Percent..... 0.1
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

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MATERIAL SAFETY DATA SHEET

Item Name	POLUURETHANE PAINT WHITE 17925 TYPE I
Part Number/Trade Name	POLYURETHANE PAINT WHITE 17925 TYPE I (LOW VLC)
National Stock Number	8010012659143
CAGE Code	33461
Part Number Indicator	B
Manufacturer Name	DEFT, INC.
Street	17451 VON KARMEN AVE
City	IRVINE
State	CA
Emergency Phone	714-474-0400
Information Phone	715-474-0400
MSDS Preparer Name	STREBEL
Date MSDS Prepared/Revised	081193
Specification Number	MIL-C-85285B
Appearance/Odor	WHITE LIQUID WITH SOLVENT ODOR
Boiling Point	175-338 F
Specific Gravity	1.47179
Evaporation Rate	0.95
Solubility in Water	INSOLUBLE
Flash Point	23 DEG F
Extinguishing Media	FOAM, ALCOHOL FOAM,CO2, DRY CHEMICAL, WATER FOG
Special Fire Fighting Procedures	FULL FIRE FIGHTING EQUIPMENT WITH SELF-CONTAINED BREATHING APPARAYUS AND FULL PROTECTIVE CLOTHING SHOULD BE WORN BY FIRE FIGHTERS, WATER MAY BE USED TO COOL CON
Unusual Fire/Explosion Hazards	KEEP CONTAINER TIGHTLY CLOSED. ISOLATE FROM HEAT,SPARKS,ELECTRICAL EQUIPMENT AND OPEN FLAME. CLOSED CONTAINER MAY EMPLODE TO EXTREME HEAT
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES.
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	ACUTE: VAPORS ARE IRRITATING TO EYES, NOSE, AND THROAT. INHALATION MAY CAUSE HEADACHE, DIFFICULT BREATHING AND LOSS OF CONSCIOUSNESS. CHRONIC: PROLONGED CONTACT WILL CAUSE DRYING AND CRACKING OF SIN, DUE TO DEFATTING ACTION. SKIN SENSITIZATION, ASTHMA
Carcinogenity: NTP	NR
Carcinogenity: IARC	NR
Carcinogenity: OSHA	NR
Symptoms of Overexposure	INHALATION: IRRITATION OF THE RESPIRATORY TRACT AND ACUTE NERVOUS

	SYSTEM DEPRESSION, FOLLOWED BY HEADACHE, DIZZINESS,STAGGERING GAIT, CONFUSION, UNCONSCIOUSNESS OR COMA. SKIN: CAUSES IRRITATION, MAY HAVE SWELLING, REDNESS RASH.
Me. .al Cond. Aggrevated by Exposure...	ASTHMA AND ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES, ECZEMA, AND DERMITITIS.
Emergency/First Aid Procedures.....	ANY CASE OF OVEREXPOSURE CONTACT PHY. INHALATION; REMOVE TO FRESH AIR, RESTORE BREATHING IF NEC. ASSTHAMATIC TYPE SYMPTOMS MAY DEVELOP. SKIN;= REMOVE CONTAMINATED CLOTHING,WASH WITH SOAP AND WATER,LAUNDER CLOTHING BERFORE REUSE. EYES;= FLUSH WITH WATER FOR 15 MIN, WHILE LIFTING EYE LIDS OCCASIONALLY. INGESTION, DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION.
Steps if Material Released/Spilled.....	EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION, FLAME, SPARKS, HOT SURFACE. VENTILATE AREA CONTAIN AND REMOVE WITH INERT ABSORBANT AND NON-SPARKING TOOLS.
Neutralizing Agent.....	N/R
Waste Disposal Method.....	WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIROMENTTAL CONTROLL REGULATIONS, EMPTY CONTAINERS MUST BE HANDLED WITH CARE, DUE TO PRODUCT RESIDUE AND FLAMMABLE VAPORS. DO NOT INCINERATE CLOSED CONTAINERS.
Handling & Storage Precautions.....	AVOID STORING NEAR HIGH TEMPERATUREES, FIRE, OPEN FLAMES, AND SPARK SOURCE. STORE IN TIGHTLY CLOSED CONTAINER. STORE IN WELL VENTILATED AREA.
Other Precautions.....	KEEP CONTAINERS TIGHT AND UPRIGHT TO PREVENT LEAKAGE. PREVENT PROLONGED BREATHING OF VAPORS OR SPRAY MIST. PROLONGED OVEREXPOSURE MAY CAUSE AN ALLERGIC REACTION. AVOID CONTACT, DO NOT TAKE INTERNALLY.
Respiratory Protection.....	USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED USE AIR PURIFYING OR FRESH AIR SUPPLIED IF NECESSARY.
Ventilation.....	EXHAUST VENTILATION TO MAINTAIN TLV LEVELS
Protective Gloves.....	COTTON, NEOPRENE, RUBBER,POLYETHYLENE
Eye Protection.....	CHEMICAL GOGGLES OR FULL FACE SHIELD
Work Hygenic Practices.....	WASH WITH SOAP AND WATER AFTER EACH USAGE.
Supplemental Health/Safety Data.....	INHALATION: REMOVE TO FRESH AIR, RESTORE BREATHING IF NECESSARY.SKIN: REMOVE CONTAMINATED CLOTHING, WASH AFFECTED AREAS WITH SOAP AND WATER, LAUNDER CLOTHING BEFORE REUSE. EYES: FLUSH WITH WATER FOR 15 MIN, OCCASIONALLY LIFTI EYELIDS. INGESTION: DO NOT

Ingredient #..... 01

Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... 10
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL N-AMYL KETONE
CAS Number..... 110-43-0
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 50 PPM

Ingredient #..... 05
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 100 PPM

Ingredient #..... 06
Ingredient Name..... PMGE ACETATE
CAS Number..... 108-65-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1
ACGHIH TLV..... NR

Ingredient #..... 07
Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 0.1
ACGHIH TLV..... 1 MG/ M3

Ingredient #..... 08
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... NR
Proprietary..... NO

Percent..... 5
ACGHIH TLV..... 200 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#3A

MATERIAL SAFETY DATA SHEET

Item Name	PAINT GRAY #36375
Part Number/Trade Name	POLYURETHANE MIL-C-85285B,36375, TYPE I
nal Stock Number	8010012659151
Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT,INC.
Emergency Phone	714-474-0400
Specification Number	MIL-C-85285B
Boiling Point	175-338 DEG
Flash Point	23 DEG F
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES,SPARKS,OR OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	ACUTE= VAPORS ARE IRRITATING TO EYES, NOSE, AND THROAT. INHALATION MAY CAUSE HEADACHE, DIFFICULT BREATHING AND LOSS OF CONSCIOUSNESS. CHRONIC= PROLONGED CONTACT WILL CAUSE DRYING AND CRACKING OF THE SKIN, DUE TO DEFATTING ACTION. SKIN SENSITIZATION, ASTHM
Carcinogenity: NTP	NR
Carcinogenity: IARC	NR
Carcinogenity: OSHA	NR
Symptoms of Overexposure	INHALATION:= IRRITATION OF THE RESPIRATRORY TRACT AND ACUTE NERVOUS SYSTEM DEPRESSION. SKIN CONTACT:= CAN CAUSE IRRITATION. EYE CONTACT:= LIQUID AREOSOLS, OR VAPORS ARE IRRITATING AND MAY CAUSE TEARING,REDNESS,AND SWELLING. INGESTION:=CAN RESULT IN IRRITA
Medical Cond. Aggrevated by Exposure	ASTHMA AND ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES, ECZEMA, AND DERMITITIS.
Respiratory Protection	USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED
Ventilation	EXHAUST VENTILATION TO MAINTAIN TLV AT RECOMMENDED LEVELS
Protective Gloves	NEOPRENE, RUBBER,POLYETHYLENE
Eye Protection	CHEMICAL GOGGLES OR FULL FACE SHIELD
Supplemental Health/Safety Data	INHALATION:= REMOVE TO FRESH AIR.RESTORE BREATHING IF NECESSARY SKIN:= REMOVE CONTAMINATED CLOTHING, WASH AFFECTED AREA WITH SOAP AND WATER, LAUNDER CLOTHING BEFORE REUSE. EYES:= FLUSH WITH WATER FOR 15 MIN, WHILE LIFTING EYE LIDS. INGESTION:= DO NOT INDU

Ingredient #..... 01
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 50 PPM

Ingredient #..... 05
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 200 PPM

Ingredient #..... 06
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1
ACGHIH TLV..... 100 PPM

Ingredient #..... 07
Ingredient Name..... PMGE ACETATE
CAS Number..... 108-65-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1
ACGHIH TLV..... NR

Ingredient #..... 08
Ingredient Name..... IBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR

Proprietary..... NO
Percent..... 0.1
ACGHIH TLV..... 1 MG/M3

dient #..... 09
dient Name..... -4 PENTANEDIONE
CAS Number..... 123-54-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... NR

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

E

MATERIAL SAFETY DATA SHEET

Item Name.....	ALIPHATIC ISOCYANATES #36375 PAINT GRAY
P- - Number/Trade Name.....	ALIPHATIC ISOCYANATE CAT, MIL-C-85285P 36375 TYPE I
Na. .nal Stock Number.....	8010012659151
CAGE Code.....	33461
Part Number Indicator.....	B
Manufacturer Name.....	DEFT,INC.
Street.....	17451 VON KARMAN AVE,
City.....	IRVINE
State.....	CA
Country.....	US
Zip Code.....	33461
Emergency Phone.....	800-424-9300-
Information Phone.....	714-474-0400
Date MSDS Prepared/Revised.....	111893
Specification Number.....	MIL-C-85285B,
Appearance/Odor.....	AMBER LIQUIR WITH SOLVENT ODOR.
Boiling Point.....	260 -338 F
Specific Gravity.....	1.08043
Flash Point.....	76 DEG F
Flash Point Method.....	TCC
Lower Explosive Limit.....	1.0
U Explosive Limit.....	7.60
E. .guishing Media.....	FOAM, ALCOHOL FOAM,CO2,DRY CHEMICAL,WATER FOG, WATER SPRAY
Special Fire Fighting Procedures.....	FULL FIRE FIHJTERS EQUIPMENT WITH SELF CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. WATER MAY BE USED TO COOL CLOSED CONTAINERS`
Unusual Fire/Explosion Hazards.....	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, SPARKS, AND OPEN FLAMES.CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT.
Stability.....	YES
Stability Conditions to Avoid.....	CONTACT WITH MOISTURE, MATERIALS WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES.
Materials to Avoid.....	WATER, AMINES, STRONG BASES, ALCOHOLS, MATAL COMPOUNDS AND SURFACE ACTIVE MATERIALS.
Hazardous Decomposition Products.....	CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN, TRACED OF HCN AND HDI
Hazardous Polymerization.....	NO
Polymerization Conditions to Avoid.....	NO
LD50 - LD50 Mixture.....	N/R
Route of Entry: Skin.....	YES
R , ` of Entry: Inhalation.....	YES
H .h Hazards - Acute & Chronic.....	ACUTE: VAPORS ARE IRRITATING TO EYES, NOSE AND THROAT. INHALATION MAY CAUSE HEADACHE, DIFFICULT BREATHING AND LOSS OF CONSCIOUSNESS. CHRONIC: AS A RESULT OF PREVIOUS REPEATED OVEREXPOSURE OR

	ASINGLE LARGE DOSE, CERTAIN INDIVIDUALS WILL DEVELOPE ISICYANATE
Carcinogenity: NTP.....	NR
Carcinogenity: IARC.....	NR
nogenity: OSHA.....	NR
toms of Overexposure.....	INHALATION: IRRITATION OF THE RESPIRATORY TRACT. SKIN; ISOCYANATES REACTS WITH SKIN PROTEIN AND MOISTURE AND CAN CAUSE IRRITATION. EYES: AREOSOLS, OR VAPORS ARE ITTITATING AND MAY CAUSE TEARING,REDNESS, AND SWELLING. INGESTION: IRRITATION AND POSSIBLE COR
Medical Cond. Aggrevated by Exposure...	ASTHMA AND ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES, ECZEMA, AND DERMITIS. ISOCYANATES SENSITIZATION.
Emergency/First Aid Procedures.....	EYES.= FLUSH WITH WATER FOR 15 MIN WHILE LIFTING EYE LIDS TO INSURE CLEANING OF EYES. SKIN.= REMOVE CONTAMINATED CLOTHING, WASH AFFECTED AREA WITH SOAP AND WATERLAUNDER CLOTHGING BEFORE REUSE. INHALATION, REMOVE TO FRESH AIR GIVE KEDICAL ATTENTION IF NEEDED. INGESTION.= DO NOT INDUCE VOMITING,SEEK MEDICAL ADVISE. SEEK MEDICAL ATTENTION ON ANY CASE OF OVEREXPOSURE.
Steps if Material Released/Spilled.....	EVACUATE ALL IGNITION SOURCES AND NON ESSENTIAL PERSONELL. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT MATERIAL./ PLACE INTO CONTAINER FOR DISPOSAL,
e Disposal Method.....	DISPOSE OF IN ACCORDANCE TO ALL STATE AND FEDERAL LAWS
piratory Protection.....	USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED
Ventilation.....	EXHAUST VENTILATION
Protective Gloves.....	NEOPRENE, RUBBER, POLYETHYLENE
Eye Protection.....	CHEMICAR RESISTANT GOGGLES
Work Hygenic Practices.....	WASH WITH SOAP AND WATER AFTER HANDELING ANY CHEMICALS.
Supplemental Health/Safety Data.....	INHALATION: REMOVE TO FRESH AIR, RESTORE BREATHING IF NECESSARY.SKIN: REMOVE CONTAMINATED CLOTHING, WASG AFFECTED AREA WITH SOAQP AND WATER. WASH CLOTHING BEFORE REUSE. EYES: FLUSH WITH WATER FOR 15 MIN. WHILE LIFTING EYE LIDS. INGESTION; DO NOT INDUCE VO

Ingredient #.....	01
Ingredient Name.....	ETHYL 3-ETHOXYPROPIONATE
CAS Number.....	763-69-9
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	20
ACGHIH TLV.....	NR

edient #.....	02
edient Name.....	ALIPHATIC ISOCYANATE**
CAS Number.....	28182-81-2
NIOSH Number.....	NR
Proprietary.....	NO

Percent..... 20
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... C 8&10 AROMATIC HYDROCARBON
CAS Number..... 64742-95-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 150 PPM

Ingredient #..... 05
Ingredient Name..... METHYL ISOBUITYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... NR
Proprietary..... NO
Percent..... 40
ACGHIH TLV..... 50 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

Item Name	PAINT POLYURETHANE 37038
Part Number/Trade Name	MIL-C-85285B,37038,TYPE I POLYURETHANE PAINT
onal Stock Number	8010012853554
CAGE Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT,INC.
Street	17451 VON KARMAN AVE.
City	IRVINE
State	CA
Country	US
Zip Code	92714
Emergency Phone	800-424-9300
Information Phone	714-474-0400
Date MSDS Prepared/Revised	02OCT92
Specification Number	C-85285B
Appearance/Odor	BLACK ODOR WITH SOLVENT ODOR
Boiling Point	175-401F
Specific Gravity	1.2401
Evaporation Rate	1.46 X N-BUTYL ACETATE
Solubility in Water	INSOLUABLE
Percent Volatiles by Volume	54.1
h Point	23 DEG F
h Point Method	TCC
er Explosive Limit	.90
Upper Explosive Limit	11.40
Extinguishing Media	FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, WATER SPRAY
Special Fire Fighting Procedures	FULL FIRE FIGHTING EQUIP. WITH SELF-CONT. BREATHING APP. AND FULL PROT. CLOTHING. USE WATER TO COOL CLOSED CONT.TO PREVENT PRESS. BLD-UP,AUTO IGN., OR EXPLOSION
Unusual Fire/Explosion Hazards	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. OVER EXP.TO DECOMP. PROD. MAY CAUSE HEALTH HAZ.
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES, SPARKS AND OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN.
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
lth Hazards - Acute & Chronic	VAPORS ARE IRRITATING TO EYES NOSE AND THROAT.INHALE MAY CAUSE HEADACHE, DIFF. IN BREATHING AND UNCONSCIOUS CHRONIC; PROLONGED CONTACT WILL CAUSE DRYNESS AND CRACKING OF THE SKIN, DUE TO DEFATTING. SKIN SENSITIZATION,ASTHMA OR OTHER

!	ALLERGY RESP. MAY DEV.
Carcinogenity: NTP.....	NO
Carcinogenity: IARC.....	NO
Carcinogenity: OSHA.....	NO
ms of Overexposure.....	INHAL: IRRI. OF THE RESP. TRACT.AND ACUTE NERV.SYSTEM DEPR. SKIN AND EYE CONTACT; CAN CAUSE IRRI. SKIN ABSORP. MAY CAUSE MODERATE IRRI. INGEST: CAN CAUSE IRRI. AND POSS. CORCSIVE ACTION IN MOUTH,STOMACH DIGEST. TRACT. VOMIT MAY CAUSE CHEMICAL PNEUMONITIS
Medical Cond. Aggrevated by Exposure...	SYMPTOMS MAY CAUSE SWELLING, REDNESS, RASH,TEARING, AND STINGING SENSITATION, IF INGESTED MAY CAUSE A CORROSIVE ACTION IN MOUTH OR STOMACH TISSUE.
Emergency/First Aid Procedures.....	EYES: FLUSH LUKEWARM LOW PRESS. WATER 15 MIN. LIFT EYELIDS. GET MED. ATT. SKIN: REMOVE CONTAMINATED CLOTHING WASH WITH SOAP AND WATER. INHALE: GET TO FRESH AIR. ASTHMATIC COND. MAY DEVELOP GET MED. ATT. INGEST: DO NOT INDUCE VOMIT. GET MED. ATT.
Steps if Material Released/Spilled.....	EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION. CONTAIN AND REMOVE WITH INERT ABSORBANT AND NON-SPARKING TOOLS.
Waste Disposal Method.....	IN ACCORDANCE WITH LOCAL, STATE, AND FED. GUIDLINES. DO NOT INCINERATE CLOSED CONTAINERS
ing & Storage Precautions.....	DO NOT STORE NEAR HIGH TEMPS., FIRE, OPEN FLAME, AND SPARK SOURCES. STORE TIGHTLY CLOSED CONTAINERS, IN WELL VENTILATED AREA.
Other Precautions.....	STORE IN BLDGS COMPLYING WITH OSHA 1910.106. AVOID CONTACT WITH SKIN AND EYES.
Respiratory Protection.....	USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED
Ventilation.....	EXHAUST OR MECHANICAL TO MAINTAIN TLV AT RECOMMENDED LEVELS
Protective Gloves.....	NEOPRENE, RUBBER, OR POLYETHYLENE
Eye Protection.....	SAFETY GLASSES OR GOGGLES
Other Protective Equipment.....	USE OF LONG SLEEVED AND LONG LEG CLOTHING RECOMMENDED
Supplemental Health/Safety Data.....	WASH HANDS BEFORE EATING, SMOKING, OR USING WASHROOM. SMOKE IN SMOKING AREA ONLY. DO NOT HANDLE UNTIL THE MANUFACTURERS SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.

Ingredient #.....	01
Ingredient Name.....	BUTYL ACCETATE
CAS Number.....	123-86-4
N H Number.....	NR
I rietary.....	NO
Percent.....	5%
OSHA PEL.....	150 PPM
ACGHIH TLV.....	150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 776-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5%
ACGHIH TLV..... 200 PPM

Ingredient #..... 03
Ingredient Name..... TOLUENE
CAS Number..... 106-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... 1%
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHY ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5%
ACGHIH TLV..... 200 PPM

Ingredient #..... 05
Proprietary..... YES
Percent..... <1
ACGHIH TLV..... NR

Ingredient #..... 06
Ingredient Name..... DISUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 0.1%
ACGHIH TLV..... .1 MG/M3

Ingredient #..... 07
Ingredient Name..... 2-4 PENTANEDIONE
CAS Number..... 123-54-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... NR

Ingredient #..... 10
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
Percent..... <.1
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PMM

Ingredient #..... 11
Ingredient Name..... ETHYL BENZENE
CAS Number..... 100-41-4
Percent..... <.1
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 12

Ingredient Name..... FLOW AGENT
CAS Number..... 77-58-7
Percent..... <1
ACGIH TLV..... .1 MG/M3

Ingredient #..... 13
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
Percent..... 20
OSHA PEL..... 50 PPM
ACGHIH TLV..... 50 PPM

Ingredient #..... 8
Ingredient Name..... MINERAL SPIRITS
CAS Number..... 64742-88-7
Percent..... <1

Ingredient #..... 9
Ingredient Name..... ANTI MAR AGENT
Percent..... <1

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#4b

MATERIAL SAFETY DATA SHEET

Item Name	37038 ALIPHATIC ISOCYANATE
Part Number/Trade Name	CAT,MIL-C-85285B, 37038 ALIPHATIC ISOCYANATE PAINT BLACK
National Stock Number	8010012853554
CAGE Code	33461
Part Number Indicator	B
Manufacturer Name	DEFT, INC.
Street	17451 VON KARMAN AVE.
City	IRVINE
State	CA
Country	US
Zip Code	92714
Emergency Phone	800-424-9300
Information Phone	714-474-0400
Date MSDS Prepared/Revised	10FEB92
Specification Number	MIL-C-82585B
Appearance/Odor	AMBER LIQUID WITH SOLVENT ODOR
Boiling Point	268-338 F
Specific Gravity	1.08043
Evaporation Rate	.15
Solubility in Water	INSOLUABLE
Percent Volatiles by Volume	30.1
Flash Point	76 DEG F
Flash Point Method	TCC
Lower Explosive Limit	1.00
Upper Explosive Limit	7.60
Extinguishing Media	FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, WATER SPRAY
Special Fire Fighting Procedures	FULL FIRE FIGHTING EQUIP. WITH SELF-CONTAINED BREATHING APPARATUS. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD UP.
Unusual Fire/Explosion Hazards	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT. CONTAINERS MAY EXPLODE WHEN EXPOSED TO HEAT. DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD.
Stability	YES
Stability Conditions to Avoid	CONTACT WITH MOISTURE, MATERIALS WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES.
Materials to Avoid	WATER, AMINES, STRONG BASES, ALCOHOLS, METAL COMPOUNDS AND SURFACE ACTIVE MATERIALS.
Hazardous Decomposition Products	CARBON MONOXIDE CARBON DIOXIDE AND OXIDES OF NITROGEN, TRACES OF HCN AND HDI
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	ACUTE; VAPORS ARE IRRITATING TO EYES NOSE AND THROAT.INHALATION;MAY CAUSE HEADACHES, DIFFICULT BREATHING AND LOSS OF CONSCIOUNESS. CHRONIC; PROLONGED

	CONTACT WILL CAUSE DRYING AND CRACKING OF THE SKIN, DUE TO DEFATTING ACTION SKIN SENSITIZATION, ASTHMA OR
C- -inogenity: NTP.....	NR
:nogenity: IARC.....	NR
Ca..inogenity: OSHA.....	NR
Symptoms of Overexposure.....	INHAL: IRRIT. OF RESP.TRACT & NERV SYS. DEPRES. HEADACHE,DIZZI,CONFUS., UNCON.,COMA. SKIN:IRRIT. SWELLING, REDNESS, RASH.DRYING, DEFATTING EYES: IRRITATING,TEARING, REDNESS,SWELLING, STINGING. INGEST: IRRITA., CORROSIVE TO MOUTH, STOMACH.
Medical Cond. Aggrevated by Exposure...	ASTHMA AND ANY OTHER RESP. DISORDER. SKIN ALLERGIES, ECZEMA, AND DERMITITIS. ISOCYANATE SENSITIZATION.
Emergency/First Aid Procedures.....	EYES: FLUSH CLEAN WARM WATER 15 MIN. LIFTING EYELIDS. GET MED. ATT. SKIN: REMOVE CONTAMINATED CLOTH. WASH WITH SOAP AND WATER. INHALE: GET FRESH AIR. RESTORE BREATHING. ASTHMATIC SYMPTOMS MAY DEVELOP IMMED. OR DELAYED. GET MED. ATT. INGEST: DO NOT INDUCE VOMIT. GET MED. ATT. DO NOT GIVE ANYTHING TO AN UNCON. PERSON.
Steps if Material Released/Spilled.....	EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBANT AND NON-SPARKING TOOLS.
' e Disposal Method.....	IN ACCORANCE WITH LOCAL, STATE, AND F REGS. DO NOT INCINERATE CLOSED CONTAINERS.
Handling & Storage Precautions.....	STORE IN CLOSED CONTAINERS, IN WELL VENTILATED AREAS, AWAY FROM HIGH TEMPS., FIRE, SPARK SOURCES. IN BLDGS. DESIGNED TO COMPLY WITH OSHA 1910.106
Other Precautions.....	KEEP CONTAINERS TIGHT AND UPRIGHT. PREVENT PROLONGED BREATHING OF VAPORS OR SPRAY MISTS. AVOID CONTACT WITH SKIN AND EYES. DO NOT TAKE INTERNALLY.
Respiratory Protection.....	USE NIOSH APPROVED RESPIRATOR.WHEN TLV LEVELS ARE EXCEEDED
Ventilation.....	GENERAL OR LOCAL VENTILATION TO MAINTAIN TLV LEVELS AT RECOMMENDED LEVELS
Protective Gloves.....	NEOPRENE, RUBBER, POLYETHYLENE
Eye Protection.....	SAFETY GLASSES OR GOGGLES
Other Protective Equipment.....	LONG SLEEVE AND LONG LEG CLOTHING. REMOVE AND WASH CONTAMINATED CLOTHING .
Work Hygenic Practices.....	WASH HANDS BEFORE EATHING, SMOKING, OR USING WASHROOM. SMOKE IN SMOKING AREAS ONLY.
Supplemental Health/Safety Data.....	EMPTY CONTAINERS MUST BE HANDLED WITH CARE, DUE TO PRODUCT RESIDUE AND FLAMMABLE VAPOR.

Ingredient #.....	01
Ingredient Name.....	ALIPHATIC ISOCYANATE
CAS Number.....	28182-81-2
NIOSH Number.....	NR

Proprietary..... NO
Percent..... 75%

Ingredient #..... 02
Ingredient Name..... C8&10 AROMATIC HYDROCARBON
CAS Number..... 64742-95-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5%
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
OSHA PEL..... 150 PPM 200 PPM STEL
ACGHIH TLV..... 150 PPM 200 PPM STEL

Ingredient #..... 04
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... 20
Recommended Limit..... 50 PPM TWA 100 STEL

Ingredient Name..... HEXAMETHYLENE DIISOCYANATE (HDI) FREE MONOMER
CAS Number..... 822-06-0
Percent..... .5-1.6
ACGHIH TLV..... .005PPM TWA

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

-DM

MATERIAL SAFETY DATA SHEET

Item Name..... POLYURETHANE
P Number/Trade Name..... MIL-C-85285B,36118,G/S,TYPE I
nal Stock Number..... 8010013055551
CAGE Code..... 33461
Part Number Indicator..... A

Manufacturer Name..... DEFT, INC.
Street..... 17451 VON KARMAN AVE.
City..... IRVINE
State..... CA
Country..... US
Zip Code..... 92714
Emergency Phone..... 800-424-9300
Information Phone..... 714-474-0400

Date MSDS Prepared/Revised..... 15JAN93

Specification Number..... NR

Appearance/Odor..... GRAY LIQUID WITH SOLVENT ODOR
Boiling Point..... 175-338 F
Specific Gravity..... 1.21
Evaporation Rate..... 1.33
Solubility in Water..... INSOLUABLE
Percent Volatiles by Volume..... 53 VOL
Flash!Point..... 23 DEG F (TCC)
F Point Method..... TCC
L Explosive Limit..... .90%
Upper Explosive Limit..... 11.40%
Extinguishing Media..... FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, WATER SPRAY
Special Fire Fighting Procedures..... FULL PROTECTIVE CLOTHING WITH SELF-CONTAINED BREATHING APP. COOL CLOSED CONTAINERS WITH WATER TO PREVENT PRESSURE BUILD-UP,AUTO IGNITION OR EXPLOSION
Unusual Fire/Explosion Hazards..... OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD
Stability..... YES
Stability Conditions to Avoid..... HIGH TEMPERATURES,SPARKS,OR OPEN FLAME
Materials to Avoid..... STRONG OXIDIZING AGENTS
Hazardous Decomposition Products..... BY HIGH HEAT/TEMPERATURE:CARBON MONOXIDE,CARBON DIOXIDE,AND OXIDES OF NITROGEN
LD50 - LD50 Mixture..... NR
Route of Entry: Skin..... YES
Route of Entry: Ingestion..... YES
Route of Entry: Inhalation..... YES
Health Hazards - Acute & Chronic..... A:VAPORS ARE IRRIT.TO EYES,NOSE&THROAT.INHAL.MAY CAUSE HEADACHESDIFF.BREATHING&LOSS OF CONSCIOUSNESS.C:PROLONGED CONTACT WILL CAUSE DRYING&CRACKING OF SKIN,DEFATTING ACTION.SKIN SENSITIZATION,ASTHMA OR OTHER ALLERGIC RESPONSES MAY DEVELOP
Carcinogenity: NTP..... NR
Carcinogenity: IARC..... NR

Carcinogenity: OSHA.....	NR
Symptoms of Overexposure.....	INHAL:IRRIT.OF THE RESP.TRACT&ACUTE NERVOUS SYS.DEPRESSION,RESPECTIVALY:HEADACHE,DIZZINESS,STAGERING GAIT,CONFUSION,UNCONSC.,COMA;SKIN:IRRIT. SWELLING,REDNESS,RASH;EYES:IRRIT.TEARING ,REDNESS,SWELLING,STINGING;INGEST:ACUTE: IRRIT.&POSS.CORROSIVE ACTION IN TH
Medical Cond. Aggrevated by Exposure...	ASTHMA AND ANY OTHER RESPIRATORY DISORDERS.SKIN ALLERGIES,ECZEMA,ANDDERMITITIS
Emergency/First Aid Procedures.....	EYES: FLUSH WITH WATER 15 MIN. CALL PHY. SKIN: WASH WITH SOAP AND WATER. WASH CONTAM. CLOTHES. INHALE: GET TO FRESH AIR. ASTHMATIC SYPMTOMS MAY DEVELOP CALL PHY. INGEST: DO NOT INDUCE VOMITTING. GET MED. HELP
Steps if Material Released/Spilled.....	EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBANT AND NON-SPARKING TOOLS
Waste Disposal Method.....	IN ACCORDANCE WITH LOCAL, STATE, AND FED. REGS.
Handling & Storage Precautions.....	STORE IN OSHA 1910.106 APPROVED BUILDINGS. AWAY FROM HIGH TEMPS., FIRE, OPEN FLAMES, AND SPARK SOURCES. WELL VENTILATED AREA. IN TIGHTLY CLOSED CONT.
Other Precautions.....	KEEP CONTAINERS TIGHT AND UPRIGHT.EMPTY CONTAINERS MUST BE HANDLED WITH CARE. PREVENT PROLONGED BREATHING OF VAPORS AND CONTACT WITH SKIN AND EYES
Respiratory Protection.....	A RESP.THAT IS APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRONMENT(AIR PURIFYING OR FRESH AIR SUPPLIED)IS NECESSARY.OBSERVEOSHA REGULATIONS FOR RESPIRATOR USE
Ventilation.....	EXHAUST SUFFICIENT TO KEEP THE AIRBORNE CONC.OF SOLVENT VAPORS OR MISTS BELOW THEIR RESPECTIVE TLV'S MUST BE UTILIZED
Protective Gloves.....	COTTON,NEOPRENE,RUBBER POLYETHYLENE
Eye Protection.....	SIDE SHIELDS,CHEM.GOGGLES,FACE SHIELD
Other Protective Equipment.....	LONG SLEEVE AND LONG LEG CLOTHING
Work Hygenic Practices.....	WASH HANDS BEFORE EATING, SMOKING OR USING WASHROOM

Ingredient #.....	01
Ingredient Name.....	BUTYL ACETATE
CAS Number.....	123-86-4
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	<5.
OSHA PEL.....	150 PPM
IH TLV.....	150 PPM

edient #.....	02
Ingredient Name.....	ETHYL 3-ETHOXYPROPIONATE
CAS Number.....	763-69-9
NIOSH Number.....	NR

Proprietary..... NO
Percent..... <5.
ACGHIH TLV..... NR

:dient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... NR
Proprietary..... NO
Percent..... 25
OSHA PEL..... 50 PPM
ACGHIH TLV..... 50 PPM

Ingredient #..... 05
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.
OSHA PEL..... 200 PPM
IH TLV..... 200 PPM

Ingredient #..... 06
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
ACGHIH TLV..... 100 PPM

Ingredient #..... 07
Ingredient Name..... MINERAL SPIRITS
CAS Number..... 64742-88-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
ACGHIH TLV..... NR

Ingredient #..... 08
Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... .1 MG/M3

:edient #..... 09
Ingredient Name..... 2-4 PENTANEDIONE
CAS Number..... 123-54-6
NIOSH Number..... NR
Proprietary..... NO

Percent..... <5.
ACGHIH TLV..... NR

Ingredient #..... 10
Ingredient Name..... ETHYL BENENE
CAS Number..... 100-41-4
Percent..... <1
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 11
Ingredient Name..... ANTI-FLOAT AGENT
CAS Number..... 1317-65-3
Percent..... <1
OSHA PEL..... 10 MP/F3
ACGHIH TLV..... 10 MP/F3

Ingredient #..... 12
Proprietary..... YES
Percent..... <1

Ingredient #..... 13
Ingredient Name..... ANTI-MAR AGENT
Percent..... <1

Ingredient #..... 14
Ingredient Name..... FLOW AGENT
CAS Number..... 26376-86-3
Percent..... <1

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#20

MATERIAL SAFETY DATA SHEET

Item Name	ALIPHATIC ISOCYANATE
P[illegible] Number/Trade Name	CAT,MIL-C-85285B,36118,G/S
[illegible]onal Stock Number	8010013055551
C[illegible] Code	33461
Part Number Indicator	B
Manufacturer Name	DEFT, INC.
Street	17451 VON KARMAN AVE.
City	IRVINE
State	CA
Country	US
Zip Code	92714
Emergency Phone	800-424-9300
Information Phone	714-474-0400
Specification Number	MIL-C-85285B,36118
Appearance/Odor	AMBER LIQUID WITH SOLVENT ODOR
Boiling Point	260-338 F
Specific Gravity	.95
Evaporation Rate	.15
Solubility in Water	INSOLUBLE
Percent Volatiles by Volume	26 VOL
Flash Point	76 DEG F
Flash Point Method	TCC
[illegible]r Explosive Limit	1%
[illegible]r Explosive Limit	7.6%
Extinguishing Media	FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, WATER SPRAY
Special Fire Fighting Procedures	FULL PROTECTION WITH SELF-CONTAINED BREATHING APP. USE WATER TO COOL CLOSED CONTAINERS. HDI VAPORS MAY BE GENERATED
Unusual Fire/Explosion Hazards	CLOSED CONTAINER MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD
Stability	YES
Stability Conditions to Avoid	CONTACT WITH MOISTURE,MATERIAL WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES
Materials to Avoid	WATER,AMINES,STRONG BASES,ALCOHOLS,METAL COMPOUNDS AND SURFACE ACTIVE MATERIALS
Hazardous Decomposition Products	BY HIGH HEAT/TEMPERATURE:CARBON MONOXIDE,CARBON DIOXIDE,AND OXIDES OF NITROGEN,TRACES OF HCN AND HDI
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Ingestion	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	A:VAPORS IRRIT.TO EYES,NOSE&THROAT.MAY CAUSE HEADACHE,DIFF.BREATHING&UNCONS.C:PRE PEATED OVEREXP. OR A LG SINGLE DOSE,[illegible] MAY DEVELOP ISOCYANATE(ISO)SENSITIZATION CAUSING A REACTION AT LATER EXPOSURE OF ISO WELL BELOW TLV VALUE OF ISO

Carcinogenity: NTP..... NR
Carcinogenity: IARC..... NR
Carcinogenity: OSHA..... NR
— toms of Overexposure..... INHAL:IRRIT.OF THE RESP.TRACT&ACUTE NERVOUS SYS.DEPRESS.,RESPECTIVELY:HEADACHE,DIZZINESS,STAGGERING GAIT,CONFUSION,UNCONSCIOUSNESS,COMA;SKIN:IRRIT.SWELLING,REDNESS,RASH;EYES:IRRIT.TEARING,REDNESS,SWELLING,STINGING;INGEST:IRRIT.POSS.CORROSIVE TO MOUTH,STOM
Medical Cond. Aggrevated by Exposure... ASTHMA AND ANY OTHER RESPIRATORY DISORDERS.SKIN ALLERGIES,ECZEMA,DERMITITIS.ISO SENSITIZATION
Emergency/First Aid Procedures..... EYES: FLUSH WITH WATER 15 MIN. CALL PHY. SKIN:REMOVE CONTAM. CLOTHES. WASH AFFECTED AREA WITH SOAP AND WATER. INHALE: GET FRESH AIR.ASTHMATIC COND. MAY DEVELOP. CALL PHY. INGEST: DO NOT INDUCE VOMITTING. CALL PHY.
Steps if Material Released/Spilled..... EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS
Waste Disposal Method..... IN ACCORDANCE WITH LOCAL, STATE, AND FED REGS.
Handling & Storage Precautions..... IN BUILDINGS DESIGNED TO COMPLY WITH OSHA 1910.106. DO NOT STORE NEAR HIGH TEMPS., FIRE, OPEN FLAMES, AND SPARK SOURCES. IN TIGHTLY CLOSED CONTAINERS
—ner Precautions..... STORE IN WELL VENTILATED AREAS.
Respiratory Protection..... A RESP.APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRONMENT(AIR PURIFYING OR FRESH AIR SUPPLIED)IS NECESSARY.OBSERVE OSHA REGULATIONS FOR RESPIRATOR USE
Ventilation..... EXHAUST SUFFICIENT TO KEEP THE AIRBORNE CONCENTRATIONS OF SOLVENT&OTHER INGRED'S BELOW THEIR TLV'S MUST BE UTILIZED
Protective Gloves..... COTTON,NEOPRENE,RUBBER,POLYETHLENE
Eye Protection..... SPLASH GUARDS,CHEM.GOGGLES,FACE SHIELD
Other Protective Equipment..... LONG SLEEVE AND LONG LEG CLOTHING

Ingredient #..... 01
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... NR

Ingredient #..... 02
Ingredient Name..... ALIPHATIC ISOCYANATE
— Number..... 28182-81-2
—SH Number..... NR
—prietary..... NO
Percent..... 35
ACGHIH TLV..... NR

Ingredient #..... 04
Ingredient Name..... C8&10 AROMATIC HYDROCARBON
CAS Number..... 64742-95-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.

Ingredient #..... 05
Ingredient Name..... BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.
OSHA PEL..... 150 PPM
ACGHIH TLV..... 150 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#67

MATERIAL SAFETY DATA SHEET

Item Name	EPOXY
Number/Trade Name	513X419 EPOXY
onal Stock Number	8010013121169
Code	85570
Part Number Indicator	A
Manufacturer Name	DESOTO AEROSPACE COATINGS, INC.(DESOTO AEROSPACE)
Street	1608 FOURTH STREET
City	BERKELEY
State	CA
Country	US
Zip Code	94710
Emergency Phone	1-800-228-5635
Information Phone	818-549-7823
Date MSDS Prepared/Revised	21AUG92
Specification Number	MIL-P-2377F TY1 CLS2
Appearance/Odor	YELLOW LIQUID . SOLVENT ODOR
Boiling Point	232 DEG F.
Specific Gravity	1.55
Flash Point	61 DEG F.
Lower Explosive Limit	1
Extinguishing Media	CO2 . DRY CHEMICAL. OR FOAM.
ial Fire Fighting Procedures	WATER SPRAY MAY BE INEFFECTIVE . COOL FIRE EXPOSED CONTAINERS WITH WATER. FOG NOZZLE ARE PREFFERED. WEAR NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS
Unusual Fire/Explosion Hazards	VAPORS MAY ACCUMULATE IN INADEQUATELY VENTILATED OR CONFINED AREA. VAPORS MAY FORM AN EXPLOSIVE MIXTURE WITH AIR. VAPORS MAY TRAVEL LONG DISTANCES, FLASH BACK
Stability	YES
Stability Conditions to Avoid	NONE RECOGNIZED
Materials to Avoid	NONE RECOGNIZED
Hazardous Decomposition Products	CO, CO2
Hazardous Polymerization	NO
Polymerization Conditions to Avoid	NO
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	EYE OR SKIN IRRITATION, MAY CAUSE DEFATTING OF SKIN. INHALED: MAY CAUSE CNS OR RESP. DEPRESSION, IRRIT. OF RESP. TRACT. ASPHY-XIATION MAY RESULT FROM OXYGEN DEFICIENT ATMOSPHERE. MAY CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA.
cinogenity: NTP	YES
cinogenity: IARC	YES
Carcinogenity: OSHA	YES
Symptoms of Overexposure	IRRITATION OF SKIN OR EYES-SKIN DRYNESS. NAUSEA, DIZZINESS, VOMITING, STAGGERING.

	CONFUSION, UNCONSCIOUSNESS.
Medical Cond. Aggrevated by Exposure...	XYLENE AND TOLUENE HAVE CAUSED LIVER, KIDNEY AND FETOTOXIC EFFECTS IN LAB ANIMALS. PREGNANT WOMEN SHOULD EXERCISE CAUTION IN USE OF THIS PRODUCT.
Emergency/First Aid Procedures.....	EYES.= FLUSH WITH WATER FOR 15 MIN WHILE LIFTING EYE LIDS TO INSURE CLEANING. SKIN.= WASH AFFECTED AREA WITH SOAP AND WATER, DO NOT USE SOLVENTS, REMOVE CONTAMINATED CLOTHING,LAUNDER BEFORE REUSE. INHALATION.= REMOVE TO FRESH AIR,GIVE MEDICAL ASSISTANCE IF NEEDED. INGESTION.= GET MEDICAL ATTENTION,
Steps if Material Released/Spilled.....	REMOVE ALL IGNITION SOURCES,WEAR PROTECTIVE EQUIPMENT TO AVOID BREATHING VAPORS.USE NON SPARKING TOOL TO PICKUP, DIKE SPILL AREA WITHJ INERT MATERIAL, COVE AND REMOVE AND PLACE INTO CONTAINER FOR DISPOSAL
Waste Disposal Method.....	DISPOSE OF IN ACCORDANCE TO STATE AND FEDERAL LAWS
Handling & Storage Precautions.....	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT,SPARKS, AND FLAME. DO NOT STORE ABOVE 120F.
Other Precautions.....	USE GROUNDING AND BONDING WHEN TRANSFERRING. AVOID FREE FALL OF LIQUID. EMPTY DRUMS MAY CONTAIN EXPLOSIVE VAPORS. DO NOT SMOKE WHERE MATERIAL IS USED OR STORED. USE IN PRESENCE OF AN OBSERVER FOR ASSISTANCE.
Respiratory Protection.....	NIOSH APPROVED RESPIRATOR FOR SOLVENT VAPOR PROTECTION. AIR FED RESPIRATOR IF CARTRIDGE RESPIRATOR INSUFFICIENT FOR CONFINED AREAS.
Ventilation.....	LOCAL OR GENERAL DILUTION TO KEEP TLV LEVELS BELOW 25% OF MAXIMUM.
Protective Gloves.....	CHEMICAL RESISTANT
Eye Protection.....	SAFETY GLASSES W/SIDE SHIELDS
Work Hygenic Practices.....	WASH WITH SOAP AND WATER AFTER HANDELING ANY CHEMICAL
Supplemental Health/Safety Data.....	AVOID SKIN CONTACT BY USE OF PROTECTIVE CLOTHING. A SAFETY SHOWER AND EMERGENCY EYEWASH FACILITIES SHOULD BE AVAILABLE. WASH ALL CLOTHING BEFORE REUSE.

Ingredient #.....	01
Ingredient Name.....	EPOXY RESIN
CAS Number.....	39817-09-9
NIOSH Number.....	NR
Proprietary.....	NO
Percent.....	25
OSHA PEL.....	UK
ACGIH TLV.....	UK

Ingredient #.....	02
Ingredient Name.....	METHYL N-AMYL KETONE
CAS Number.....	110-43-0
Proprietary.....	NO

Percent..... 5%
OSHA PEL..... 100 PPM
ACGHIH TLV..... 50 PPM

dient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
Proprietary..... NO
Percent..... <5
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... ETHYL-3-ETHOXY PROPIONATE
CAS Number..... 763-69-9
Proprietary..... NO
Percent..... <5

Ingredient #..... 05
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
Proprietary..... NO
Percent..... 10
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 06
Ingredient Name..... STRONTIUM CHROMATE
CAS Number..... 7789-06-2
NIOSH Number..... NR
Proprietary..... NO
Percent..... 25%
ACGHIH TLV..... .05 MG/M3

Ingredient #..... 07
Ingredient Name..... TITANIUM DIOXIDE
CAS Number..... 13463-67-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5%
OSHA PEL..... 10 MG/M3
ACGHIH TLV..... 10 MG/M3

Ingredient #..... 08
Ingredient Name..... CRYSTALLINE SILICA-QUARTZ
CAS Number..... 14808-60-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... 20%
ACGHIH TLV..... 0.1 PPM (RESP)

Ingredient #..... 09
Ingredient Name..... EPOXY RESIN
CAS Number..... 37312-33-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5%
ACGHIH TLV..... NOT DETERMINED

MATERIAL SAFETY DATA SHEET

Item Name	HIGH SOLIDS PRIMER ACITVATOR
Part Number/Trade Name	910X942 ACTIVATOR
National Stock Number	8010013121169
Cage Code	85570
Part Number Indicator	B
Manufacturer Name	COURTAULDS AERSPACE (DESOTO AEROSPACE)
Street	1608 FOURTH STREET
City	BERKELEY
State	CA
Country	US
Zip Code	94710
Emergency Phone	1-800-228-5635
Information Phone	818-549-7823
Date MSDS Prepared/Revised	010594
Specification Number	NR
Appearance/Odor	AMBER LIQUID, SOLVENT ODOR
Boiling Point	175 DEG F.
Specific Gravity	0.96
Evaporation Rate	SLOWER THAN N-BUTYL
Flash Point	42 DEG F.
Extinguishing Media	CO2, DRY CHEMICAL, OR FOAM
Special Fire Fighting Procedures	WATER SPRAY MAY BE INEFFECTIVE, COOL FIRE EXPOSED CONTAINER WITH WATER, FOG NOZZLE ARE PREFFERED, WEAR NIOSH APPROVED RSELF CONTAINED BREATHING APPARATUS,
Unusual Fire/Explosion Hazards	VAPORS MAY ACCUMULATE IN INADEQUATELY VENTILATED OR CONFINED AREAS. VAPORS MAY FORM EXPLOSIVE MIXTURE WITH AIR, VAPORS MAY TRAVEL LOONG DISTANCE , FLASHBACK
Stability	YES
Stability Conditions to Avoid	NONE RECOGNIZED
Materials to Avoid	NONE RECOGNIZED
Hazardous Decomposition Products	CO, CO2
Hazardous Polymerization	NO
Polymerization Conditions to Avoid	NO
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	PROLONGED CONTACT MAY CAUSE IRRITATION OR BURNING TO EYES, IRRI-TATION OR DERMATITIS TO SKIN. MAY CAUSE RESPIRATORY IRRITATION OR CENTRAL NERVOUS SYS. DEPRESSION IF INHALED, CHAR BY: NAUSEA, DIZZINESS, CONFUSION, UNCONSCIOUSNESS. MAY CAUSE GASTROINTEST-
Carcinogenity: NTP	NR
Carcinogenity: IARC	NR
Carcinogenity: OSHA	NR
Symptoms of Overexposure	IRRITATION TO SKIN, EYES, RESPIRATOR. GASTROINTESTINAL TRACT.BURNING OF EYES, NAUSEA, DIZZINESS, VOMITING, UNCONSCIOUSNESS.

Medical Cond. Aggrevated by Exposure... PRE-EXISTING SKIN, LUNG AND EYE CONDITIONS.

Emergency/First Aid Procedures..... EYES.= FLUSH WITH WATER FOR 15 MIN WHILE LIFTING EYE LIDS OCCASIONALLY TO INSURE CLEANING. SKIN.= REMOVE AND LAUNDER CLOTHING BEFORE REUSE, WASG AFFECTED AREA WITH SOAP AND WATER. INHALATION= REMOVE TO FRESH AIR, GIVE MEDICAL ASSISTANCE IF NEEDED, INGESTION, CALL [PHY IMMEDIATELY.

Steps if Material Released/Spilled..... REMOVE ALL IGNITION SOURCES, VEMTILATE AREA, DIKE SPILL AREA WITH INERT MATERIAL, COVER THEN REMOVE AND PLACE INTO CONTANIER FOR DISPOSAL.

Waste Disposal Method..... DISPOSE OF IN ACCORDANCE TO ALL STATE AND FEDERAL LAWS

Respiratory Protection..... NIOSH APPROVED RESPIRATOR FOR ISOPROPYL ALCOHOL AND TOLUENE.SOLVENT VAPOR CARTRIDGE OR AIR FED RESPIRATOR.

Ventilation..... GENERAL DILUTION OR LOCAL TO MAINTAIN TLV BELOW 25% OF TLV LEVEL.

Protective Gloves..... CHEMICAL RESISTANT.

Eye Protection..... SAFETY GLASSES W/SIDE SHIELDS OR GOGGLES

Work Hygenic Practices..... WASH WITH SOAP AND WATER AFTER HANDELING.

Supplemental Health/Safety Data..... AVOID SKIN CONTACT BY WEARING PROTECTIVE CLOTHING. A SAFETY SHOWER AND EYEWASH FACILITY SHOULD BE AVAILABLE.

edient #..... 01
prietary..... YES
Percent..... <5
ACGHIH TLV..... NOT DETERMINED

Ingredient #..... 02
Proprietary..... YES
Percent..... 70

Ingredient #..... 03
Ingredient Name..... ALIPHATIC AMINE
CAS Number..... 90-72-2
NIOSH Number..... NR
Proprietary..... NO
Percent..... 10%
ACGHIH TLV..... NOT DETERMINED

Ingredient #..... 04
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
Percent..... 5
OSHA PEL..... 100 PPM 150STEL
ACGHIH TLV..... 100 PPM 150 STEL

edient #..... 05
edient Name..... ETHYL BENZENE
Number..... 100-41-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5

OSHA PEL..... 100 PPM 125 STEL
ACGHIH TLV..... 100 PPM 125 STEL

Ingredient #..... 06
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
Proprietary..... NOS
Percent..... 10
OSHA PEL..... 200 PPM STEL300
ACGHIH TLV..... 200PPM STEL300

Ingredient #..... 07
Ingredient Name..... BUTYL ALCOHOL
CAS Number..... 71-63-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
OSHA PEL..... STEL C50
ACGHIH TLV..... STEL C50

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

DOD Hazardous Materials Information System
DoD 6050.5-L
AS OF August 1993

FSC: 8010
NIIN: 013226622
Manufacturer's CAGE: 33461
Part No. Indicator: A
Part Number/Trade Name: MIL-C-85285B, 26270 PC 03GY363

General Information

Item Name: POLYURETHANE COATING, GRAY 26270, PART 1 OF 2
Manufacturer's Name: DEFT, INC
Manufacturer's Street: 17451 VON KARMAN AVE
Manufacturer's P. O. Box: N/K
Manufacturer's City: IRVINE
Manufacturer's State: CA
Manufacturer's Country: US
Manufacturer's Zip Code: 92714
Manufacturer's Emerg Ph #: 800-424-9300 CHEMTREC
Manufacturer's Info Ph #: 714-474-0400
Distributor/Vendor # 1:
Distributor/Vendor # 1 Cage:
Distributor/Vendor # 2:
Distributor/Vendor # 2 Cage:
Distributor/Vendor # 3:
Distributor/Vendor # 3 Cage:
Distributor/Vendor # 4:
Distributor/Vendor # 4 Cage:
Safety Data Action Code:
fety Focal Point: G
cord No. For Safety Entry: 001
ot Safety Entries This Stk#: 002
Status: KM
Date MSDS Prepared: 19APR89
Safety Data Review Date: 28JAN93
Supply Item Manager: GSA
MSDS Preparer's Name: N/K
Preparer's Company:
Preparer's St Or P. O. Box:
Preparer's City:
Preparer's State:
Preparer's Zip Code:
Other MSDS Number:
MSDS Serial Number: BQDSS
Specification Number: MIL-C-85285
Spec Type, Grade, Class: TYPE 1; KIT 2
Hazard Characteristic Code: N/
Unit Of Issue: KT
Unit Of Issue Container Qty: 2 GL KT
Type Of Container: METAL
Net Unit Weight: N/K
NRC/State License Number: N/K
Net Explosive Weight: N/K
Net Propellant Weight-Ammo: N/K
Coast Guard Ammunition Code: N/K

USAF HOSPITAL/SGB ID:801-777-5655 FEB 14'94 11:29 No.003 P.02

Ingredients/Identity Information

Proprietary: NO
Ingredient: N-BUTYL ACETATE (VAPOR PRESSURE 13 MM HG @ 68F)
Ingredient Sequence Number: 01
Percent: 10
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: AF7350000
CAS Number: 123-86-4
OSHA PEL: 150 PPM/STEL 200 PPM
ACGIH TLV: 150 PPM/STEL 200 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: ETHYL 3-ETHOXYPROPIONATE (VAPOR PRESSURE .7 MM HG @ 68F)
Ingredient Sequence Number: 02
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: UF3325000
CAS Number: 763-69-9
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: 50 PPM/STEL 100 PPM

Proprietary: NO
Ingredient: ANTISETTLING AGENT (VAPOR PRESSURE 0 MM HG)
Ingredient Sequence Number: 03
cent: <1
redient Action Code:
ingredient Focal Point: G
NIOSH (RTECS) Number: 1003375AA
CAS Number: N/K
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: TOLUENE (SARA III) (VAPOR PRESSURE 22 MM HG @ 68F)
Ingredient Sequence Number: 04
Percent: 2.66
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: XS5250000
CAS Number: 108-88-3
OSHA PEL: 100 PPM/STEL 150 PPM
ACGIH TLV: 100 PPM/STEL 150 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: DISPERSION AID (VAPOR PRESSURE 0 MM HG)
Ingredient Sequence Number: 05
Percent: <1
Ingredient Action Code:
Ingredient Focal Point: G

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OSH (RTECS) Number: 1001523DA
S Number: N/K
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: XYLENE (SARA III) (VAPOR PRESSURE 21 MM @ 100F)
Ingredient Sequence Number: 06
Percent: 0.29
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM/STEL 150 PPM
ACGIH TLV: 100 PPM/STEL 150 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: ANTI-FLOAT AGENT (VAPOR PRESSURE 0 MM HG)
Ingredient Sequence Number: 07
Percent: <1
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1004702AF
CAS Number: PROPRIETARY
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED
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oprietary: NO
gredient: FLOW AGENT (VAPOR PRESSURE 0 MM HG)
ngredient Sequence Number: 08
Percent: <1
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1001678FA
CAS Number: TRADE SECRT
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: METHYL ETHYL KETONE (SARA III) (VAPOR PRESSURE 70 MM HG @ 68F)
Ingredient Sequence Number: 09
Percent: 4.94
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: EL6475000
CAS Number: 78-93-3
OSHA PEL: 200 PPM/STEL 300 PPM
ACGIH TLV: 200 PPM/STEL 300 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: ANTI MAR AGENT (VAPOR PRESSURE 0 MM HG)
Ingredient Sequence Number: 10

USAF HOSPITAL/SGB ID:801-777-5655 FEB 14'94 11:30 No.003 P.04

rcent: <1
redient Action Code:
gredient Focal Point: G
NIOSH (RTECS) Number: 1001519AA
CAS Number: N/K
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: ETHYL BENZENE (SARA III) (VAPOR PRESSURE 7.1 MM HG @ 68F)
Ingredient Sequence Number: 11
Percent: 0.08
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: DA0700000
CAS Number: 100-41-4
OSHA PEL: 100 PPM/STEL 125 PPM
ACGIH TLV: 100 PPM/STEL 125 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: FLOW AGENT (VAPOR PRESSURE 0 MM HG)
Ingredient Sequence Number: 12
Percent: <1
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1001678FA
CAS Number: N/K
OSHA PEL: NOT ESTABLISHED
IH TLV: NOT ESTABLISHED
er Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: DIBUTYLTIN DILAURATE (VAPOR PRESSURE .2 MM HG @ 320F)
Ingredient Sequence Number: 13
Percent: <0.1
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: WH7000000
CAS Number: 77-58-7
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: 0.1 MG/M3
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: 2-4 PENTANEDIONE (VAPOR PRESSURE 6.9 MM HG @ 68F)
Ingredient Sequence Number: 14
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: SA1925000
CAS Number: 123-54-6
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: UNION CARBIDE:20 PPM

USAF HOSPITAL/SGB ID:801-777-5655 FEB 14'94 11:31 No.003 P.05

·oprietary: NO
gredient: VOC: 303 G/L
.gredient Sequence Number: 15
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 9999999VO
CAS Number: NR
OSHA PEL: N/K
ACGIH TLV: N/K
Other Recommended Limit: NONE SPECIFIED

Physical/Chemical Characteristics

Appearance And Odor: GRAY LIQUID WITH SOLVENT ODOR
Boiling Point: 175 TO 401F
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): N/K
Vapor Density (Air=1): > AIR
Specific Gravity: 1.31933
Decomposition Temperature: N/K
Evaporation Rate And Ref: 1.69 X N-BUTYL ACETATE
Solubility In Water: INSOLUBLE
Percent Volatiles By Volume: 34.5
Viscosity: N/K
pH: N/K
Radioactivity: N/K
Form (Radioactive Matl): N/K
Magnetism (Milligauss): N/K
Corrosion Rate (IPY): N/K
toignition Temperature: N/K

Fire and Explosion Hazard Data

Flash Point: 23.0F,-5.0C
Flash Point Method: TCC
Lower Explosive Limit: 1.00
Upper Explosive Limit: 11.40
Extinguishing Media: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG
Special Fire Fighting Proc: WEAR FULL FIRE FIGHTING EQUIP W/SCBA & FULL PROTECTIVE CLOTHING. USE WATER TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP, AUTO IGNITION, OR EXPLOSION.
Unusual Fire And Expl Hazrds: KEEP CNTNR CLSD. KEEP FROM HEAT/IGNIT SOURCE. CLSD CNTNR MAY EXPLODE W/HEAT. APPLIC TO HOT SURFACE REQ SPECIAL PRECAUTION. OVEREXPOSURE TO DECOMP PROD-HLTH HZD.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES
Materials To Avoid: STRONG OXIDIZING AGENTS
Hazardous Decomp Products: BY HIGH HEAT/TEMPERATURE: CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES

USAF HOSPITAL/SGB ID:801-777-5655 FEB 14'94 11:31 No.003 P.06

Health Hazard Data

LD50-LC50 Mixture: N/K
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: ACUTE; IRRITATING TO EYES (TEARING, REDNESS, SWELLING W/STINGING), NOSE, & THROAT. INHALATION: HEADACHES, DIFFICULT BREATHING, DIZZINESS, STAGGERING, CONFUSION, UNCONSCIOUSNESS, COMA. INGEST: IRRITATION, CORROSIVE TO GI TRACT. VOMITING MAY CAUSE ASPIRATION (SOLVENT), RESULTING IN CHEM PNEUMONITIS. LIVER & KIDNEY DAMAGE
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: N/K
Signs/Symptoms Of Overexp: CHRONIC; PROLONGED CONTACT WILL CAUSE DRYING AND CRACKING OF THE SKIN DUE TO DEFATTING ACTION. SKIN SENSITIZATION, ASTHMA OR OTHER ALLERGIC RESPONSES MAY DEVELOP.
Med Cond Aggravated By Exp: ASTHMA AND ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES, ECZEMA, AND DERMATITIS.
Emergency/First Aid Proc: INHAL: MOVE TO FRESH AIR. RESTORE BREATHING. ASTHMATIC TYPE SYMPTOMS MAY DEVELOP (IMMED/DELAYED). GET MED AID. SKIN: REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREAS WITH SOAP AND WATER. WASH CONTAMINATED CLOTHING BEFORE REUSE. EYES: FLUSH WITH LUKEWARM WATER (LOW PRESSURE) 15 MIN, LIFTING EYELIDS. GET MED AID. INGEST: DONT INDUCE VOMITING. DONT GIVE ANYTHING TO UNCONSCIOUS PERSON. GET MED AID.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION (FLAME, SPARK SOURCES, HOT SURFACES). VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS.
Neutralizing Agent: N/K
Waste Disposal Method: DISPOSE IN ACCORDANCE WITH FEDERAL, STATE & LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS MUST BE HANDLED WITH CARE DUE TO PRODUCT RESIDUE & FLAMMABLE VAPOR. DONT INCINERATE CLOSED CONTAINERS. EPA HZD WASTE #: D001, F003, F005, IGNITABLE.
Precautions-Handling/Storing: STORE IN BLDGS IN COMPLIANCE WITH OSHA 1910.106. AVOID STORING NEAR HIGH TEMPS, IGNITION SOURCES. STORE IN CLOSED CONTAINERS IN WELL VENTED AREA.
Other Precautions: KEEP CONTAINER TIGHT/UPRIGHT (PREVENT LEAK). AVOID PROLONGED BREATHING-VAPOR. PROLONGED OVEREXPOSURE MAY CAUSE ALLERGIC REACTION. AVOID SKIN/EYE CONTACT. DONT INGEST. DONT HANDLE TILL PRECAUTION READ/UNDERSTOOD. SMOKE IN SMOKING AREAS ONLY.

Control Measures

Respiratory Protection: RESPIRATOR RECOMMENDED FOR ORGANIC VAPOR ENVIRONMENT (AIR PURIFYING/FRESH AIR SUPPLIED). OBSERVE OSHA RESPIRATOR REGULATIONS. IF AIRBORNE CONCENTRATIONS CAN BE MAINTAINED/DOCUMENTED BELOW TLV/PEL, OTHER NIOSH/MSHA RESPIRATOR MAY BE USED.
Ventilation: EXHAUST VENTILATION SUFFICIENT TO KEEP AIRBORNE CONCENTRATIONS (SOLVENTS) BELOW TLV'S. REMOVE ALL IGNITION SOURCES.
Protective Gloves: COTTON, NEOPRENE, RUBBER POLYETHYLENE
Eye Protection: SPLSH GUARDS,SIDESHLDS,GOGGLES,FACESHLDS
Other Protective Equipment: THE USE OF LONG SLEEVE AND LONG LEG CLOTHING

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RECOMMENDED. REMOVE AND WASH CONTAMINATED CLOTHING BEFORE REUSE.
:k Hygienic Practices: WASH HANDS BEFORE EATING, SMOKING, OR USING
WASHROOM.
Suppl. Safety & Health Data: N/K

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DOD Hazardous Materials Information System
DoD 6050.5-L
AS OF August 1993

FSC: 8010
NIIN: 013226622
Manufacturer's CAGE: 33461
Part No. Indicator: B
Part Number/Trade Name: CAT, MIL-C-85285B, 26270 PC 03GY363CAT

General Information

Item Name: POLYURETHANE COATING GRAY 26270 PART 2 OF 2
Manufacturer's Name: DEFT, INC
Manufacturer's Street: 17451 VON KARMAN AVE
Manufacturer's P. O. Box: N/K
Manufacturer's City: IRVINE
Manufacturer's State: CA
Manufacturer's Country: US
Manufacturer's Zip Code: 92714
Manufacturer's Emerg Ph #: 800-424-9300 CHEMTREC
Manufacturer's Info Ph #: 714-474-0400
Distributor/Vendor # 1:
Distributor/Vendor # 1 Cage:
Distributor/Vendor # 2:
Distributor/Vendor # 2 Cage:
Distributor/Vendor # 3:
Distributor/Vendor # 3 Cage:
Distributor/Vendor # 4:
Distributor/Vendor # 4 Cage:
Safety Data Action Code:
'ety Focal Point: G
ord No. For Safety Entry: 002
ot Safety Entries This Stk#: 002
Status: KM
Date MSDS Prepared: 19APR89
Safety Data Review Date: 28JAN93
Supply Item Manager: GSA
MSDS Preparer's Name: N/K
Preparer's Company:
Preparer's St Or P. O. Box:
Preparer's City:
Preparer's State:
Preparer's Zip Code:
Other MSDS Number:
MSDS Serial Number: BQDST
Specification Number: MIL-C-85285
Spec Type, Grade, Class: TYPE 1; KIT 2
Hazard Characteristic Code: N/
Unit Of Issue: KT
Unit Of Issue Container Qty: 2 GL KT
Type Of Container: METAL
Net Unit Weight: N/K
NRC/State License Number: N/K
Net Explosive Weight: N/K
Net Propellant Weight-Ammo: N/K
Coast Guard Ammunition Code: N/K

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Ingredients/Identity Information

Proprietary: NO
Ingredient: ETHYL 3-ETHOXYPROPIONATE (VAPOR PRESSURE .7 MM HG @ 68F)
Ingredient Sequence Number: 01
Percent: 15
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: UF3325000
CAS Number: 763-69-9
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: 50 PPM/STEL 100 PPM

Proprietary: NO
Ingredient: ALIPHATIC ISOCYANATE (HEXAMETHYLENE DIISOCYANATE [HDI] CAS: 822-06-0; FREE MONOMER CONTENT <.5%)
Ingredient Sequence Number: 02
Percent: 20
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: HQ9170000
CAS Number: 28182-81-2
OSHA PEL: N/K
ACGIH TLV: TWA: 0.005 PPM
Other Recommended Limit: MOBAY:CEILING.02 PPM

Proprietary: NO
Ingredient: ALIPHATIC ISOCYANATE (HEXAMETHYLENE DIISOCYANATE [HDI] CAS: 2-06-0; FREE MONOMER CONTENT <.5%)
Ingredient Sequence Number: 03
Percent: 25
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: HQ9170000
CAS Number: 28182-81-2
OSHA PEL: N/K
ACGIH TLV: TWA: 0.005 PPM
Other Recommended Limit: MOBAY:CEILING.02 PPM

Proprietary: NO
Ingredient: C8&10 AROMATIC HYDROCARBON (VAPOR PRESSURE 3 MM HG @ 68F)
Ingredient Sequence Number: 04
Percent: <5
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 1004285AH
CAS Number: 64742-95-6
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: MFR PEL: 100 PPM

Proprietary: NO
Ingredient: N-BUTYL ACETATE (VAPOR PRESSURE 13 MM HG @ 68F)
Ingredient Sequence Number: 05
Percent: <5

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redient Action Code:
redient Focal Point: G
OSH (RTECS) Number: AF7350000
CAS Number: 123-86-4
OSHA PEL: 150 PPM/STEL 200 PPM
ACGIH TLV: 150 PPM/STEL 200 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: METHYL ISOBUTYL KETONE (SARA III) (VAPOR PRESSURE 15 MM HG @ 68F)
Ingredient Sequence Number: 06
Percent: 36.2
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: SA9275000
CAS Number: 108-10-1
OSHA PEL: 50 PPM/STEL 75 PPM
ACGIH TLV: 50 PPM/STEL 75 PPM
Other Recommended Limit: NONE SPECIFIED

Proprietary: NO
Ingredient: VOC: 532 G/L
Ingredient Sequence Number: 07
Percent: N/K
Ingredient Action Code:
Ingredient Focal Point: G
NIOSH (RTECS) Number: 9999999V0
CAS Number: NR
OSHA PEL: N/K
IH TLV: N/K
er Recommended Limit: NONE SPECIFIED

Physical/Chemical Characteristics

Appearance And Odor: AMBER LIQUID WITH SOLVENT ODOR
Boiling Point: 241 TO 338F
Melting Point: N/K
Vapor Pressure (MM Hg/70 F): N/K
Vapor Density (Air=1): > AIR
Specific Gravity: 0.95438
Decomposition Temperature: N/K
Evaporation Rate And Ref: 0.92 X N-BUTYL ACETATE
Solubility In Water: INSOLUBLE
Percent Volatiles By Volume: 63.1
Viscosity: N/K
pH: N/K
Radioactivity: N/K
Form (Radioactive Matl): N/K
Magnetism (Milligauss): N/K
Corrosion Rate (IPY): N/K
Autoignition Temperature: N/K

Fire and Explosion Hazard Data

Flash Point: 60.0F,15.6C
Flash Point Method: TCC

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ver Explosive Limit: 1.00
er Explosive Limit: 8.00
tinguishing Media: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG
Special Fire Fighting Proc: USE FULL PROTECT CLOTH/FIREFIGHT EQUIP W/ SCBA. WATER MAY BE USED TO COOL CLSD CNTNRS (PREVENT PRESS BLDUP/AUTOIGNIT/ EXPLOS). HDI/IRRIT VAPOR GENERATED BY FIRE.
Unusual Fire And Expl Hazrds: KEEP CNTNR CLSD. KEEP FROM HEAT/IGNIT SOURCE. CLSD CNTNR MAY EXPLODE W/HEAT. APPLIC TO HOT SURFACE REQ SPECIAL PRECAUTION. OVEREXPOSURE TO DECOMP PROD-HLTH HZD.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): CONTACT WITH MOISTURE, MATERIAL WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES.
Materials To Avoid: WATER, AMINES, STRONG BASES, ALCOHOLS, METAL COMPOUNDS AND SURFACE ACTIVE MATERIALS.
Hazardous Decomp Products: BY HIGH HEAT/TEMPERATURE: CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN, TRACES OF HCN AND HDI.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): CONTACT WITH MOISTURE, MATERIALS WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES.

Health Hazard Data

LD50-LC50 Mixture: N/K
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: ACUTE; IRRITATING TO EYES, NOSE, THROAT. HAL: HEADACHES, DIZZINESS, STAGGERING, DIFFICULT BREATHING, CONFUSION, CONSCIOUSNESS, COMA. SKIN: IRRITATING (SWELLING, REDNESS, RASH). EYES: RIT (TEARING, REDNESS, SWELLING W/STINGING). INGEST: IRRITATION, CORROSIVE TO GI TRACT. ASPIRATION (VOMITING)-CHEMICAL PNEUMONITIS.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: N/K
Signs/Symptoms Of Overexp: CHRONIC; AS A RESULT OF PREVIOUS REPEATED OVEREXPOSURE OR A SINGLE LARGE DOSE, CERTAIN INDIVIDUALS WILL DEVELOP ISOCYANATE SENSITIZATION WHICH WILL CAUSE THEM TO REACT TO A LATER EXPOSURE OF ISOCYANATE LEVELS WELL BELOW THE TLV VALUE OF ISOCYANATES.
Med Cond Aggravated By Exp: ASTHMA AND ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES, ECZEMA AND DERMATITIS. ISOCYANATE SENSITIZATION.
Emergency/First Aid Proc: INHAL: MOVE TO FRESH AIR. RESTORE BREATHING. ASTHMATIC TYPE SYMPTOMS MAY DEVELOP (IMMED/DELAYED). GET MED AID. SKIN: REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREAS WITH SOAP & WATER. WASH CONTAMINATED CLOTHES BEFORE REUSE. EYES: FLUSH WITH LUKEWARM WATER (LOW PRESSURE) 15 MIN, LIFTING EYELIDS. GET MED AID. INGEST: DONT INDUCE VOMITING. DO NOT GIVE ANYTHING TO AN UNCONSCIOUS PERSON. GET MED AID.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION (FLAME, SPARK SOURCES, HOT SURFACES). VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS.
Neutralizing Agent: N/K

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ste Disposal Method: DISPOSE IN ACCORDANCE WITH FEDERAL, STATE & LOCAL 'IRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS MUST BE HANDLED WITH RE, DUE TO PRODUCT RESIDUE & FLAMMABLE VAPOR. DONT INCINERATE CLOSED CONTAINER. EPA HZD WASTE #: D001, F003, F005, IGNITABLE.
Precautions-Handling/Storing: STORE IN BUILDINGS IN COMPLIANCE WITH OSHA 1910.106. AVOID STORING NEAR HIGH TEMPS/IGNITION SOURCE. STORE IN CLOSED CONTAINER IN WELL VENTILATED AREA.
Other Precautions: KEEP CNTNR TIGHT/UPRIGHT (PREVENT LEAK). PREVENT PROLONG VAPOR BREATHING. PROLONG OVEREXPOSURE MAY CAUSE ALLERGIC REACTION. AVOID CONTACT W/SKIN & EYES. DONT INGEST.DONT HANDLE TILL MFR PRECAUTIONS READ/UNDERSTOOD. SMOKE IN SMOKE AREAS ONLY.

Control Measures

Respiratory Protection: USE RESPIRATOR RECOMMENDED FOR USE IN ORGANIC VAPOR ENVIRONMENT (AIR PURIFYING/FRESH AIR SUPPLIED). OBSERVE OSHA RESPIRATOR REGULATIONS.VAPOR PARTIC RESPIRATOR (TC23C) MAY BE USED WHEN AIR MONITORING SHOWS VAPOR LEVELS BELOW 10X TLV/PEL.
Ventilation: EXHAUST VENT TO KEEP AIRBORNE CONCENTRATION (HDI, POLYISOCYANATES, SOLVENT) BELOW TLVS. REMOVE IGNITION SOURCES.
Protective Gloves: COTTON, NEOPRENE, RUBBER, POLYETHYLENE
Eye Protection: CHEM GOGGLES,FACESHLDS,SPLSH GRDS,SDSHLD
Other Protective Equipment: THE USE OF LONG SLEEVE AND LONG LEG CLOTHING RECOMMENDED. REMOVE AND WASH CONTAMINATED CLOTHING BEFORE REUSE.
Work Hygienic Practices: WASH HANDS BEFORE EATING, SMOKING OR USING WASHROOM.
Suppl. Safety & Health Data: N/K

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MATERIAL SAFETY DATA SHEET

Item Name.....	POLYURETHANE
Part Number/Trade Name.....	POLYURETHANE 26118
›nal Stock Number.....	8010013226623
Code.....	33461
Part Number Indicator.....	A
Manufacturer Name.....	DEFT, INC
Emergency Phone.....	1-800-424-9300
Specification Number.....	MIL-C-85285B,26118,
Boiling Point.....	175 - 338 F
Flash Point.....	23 F TCC LEL:1%
Stability.....	YES
Stability Conditions to Avoid.....	HIGH TEMP, SPARKS, OR OPEN FLAMES
Materials to Avoid.....	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products.....	BY HIGH HEAT/TEMP:CARBON MONOXIDE,CARBON DIOXIDE,&OXIDES OF NITROGEN
LD50 - LD50 Mixture.....	N/R
Route of Entry: Skin.....	YES
Route of Entry: Inhalation.....	YES
Health Hazards - Acute & Chronic.....	ACUTE:VAPORS ARE IRRITATING TO EYES/NOSE/THROAT.INHALATION MAY CAUSE HEADACHES/DIFICULT BREATHING & LOSS OF CONSCIOUSNESS. CHRONIC:PROLONGED CONTACT WILL CAUSE DRYING & CRACKING OF THE SKIN, DUE TO DEFATTING ACTION.SKIN SENSITIZATION,ASTHMA OR OTHER ALLER
Carcinogenity: NTP.....	NO
Carcinogenity: IARC.....	NO
Carcinogenity: OSHA.....	NO
Symptoms of Overexposure.....	INHALATION:IRRITATION TO RESP TRACT & ACUTE NERVOUS SYSTEM DEPRESSION/HEADACHE/DIZZINESS/STAGGERING GAIT/CONFUSION/UNCONSCIOUSNESS/COMA. SKIN:CAUSE IRRITATION/SWELLING/REDNESS/RASH. EYES:CAUSETEARING/REDNESS/SWELLING/STING ING. INGESTION:POSSIBLE CORROSIVE
Medical Cond. Aggrevated by Exposure...	ASTHMA & OTHER RESP DISORDERS. SKIN ALLERGIES/ECZEMA/DERMITITIS
Respiratory Protection.....	APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRON. OBSERVE OSHA REGULATIONS FOR RESP USE. VENTILATION SHOULD BE PROVIDED TO KEEP EXPOSURE LEVELS BELOW THE OSHA PERMISSIBLE LIMITS.
Ventilation.....	EXHAUST VENTILATION SUFFICIENT. REMOVE ALL IGNITION SOURCES/HEAT/SPARKS/FLAME/HOT SURFACES
Protective Gloves.....	YES/COTTON/NEOPRENE/RUBBER/POLYETHYLENE
Protection.....	YES/SPLASH GUARDS/SIDE SHEIDS/CHEICAL GO
lemental Health/Safety Data.....	USE OF LONG SLEEVE & LONG LEG CLOTHING IS RECOMMENDED. REMOVE & WASH CONTAMINATED CLOTHING BEFORE REUSE.

Ingredient #..... 01
Ingredient Name..... N-BUTYL ACETATE STEL=200 PPM MM HG 8.4
CAS Number..... 123-86-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 10
ACGHIH TLV..... 150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 03
Ingredient Name..... XYLENE
STEL = 150 PPM MM HG 21
CAS Number..... 1330-20-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL ETHYL KETONE
STEL=300 PPM MM HG 70.2
CAS Number..... 78-93-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 200 PPM

Ingredient #..... 05
Ingredient Name..... TOLUENE
STEL = 150 PPM MM HG 22
CAS Number..... 108-88-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 100 PPM

Ingredient #..... 06
Ingredient Name..... PMGE ACETATE
MM HG 3.8
CAS Number..... 108-65-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 07
Ingredient Name..... DIBUTYLTIN DILAURATE
STEL=.2 MM HG .2
CAS Number..... 77-58-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... .1 MG/M3

Ingredient #..... 08
Ingredient Name..... 2-4 PENTANEDIONE
MM HG 7
Number..... 123-54-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... UNDETERMINED

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

Item Name.....	ALIPHATIC ISOCYANATE
Part Number/Trade Name.....	ALIPPHATIC ISOCYANATE 26118
National Stock Number.....	8010013226623
Cage Code.....	33461
Part Number Indicator.....	B
Manufacturer Name.....	DEFT, INC
Emergency Phone.....	1-800-424-9300
Specification Number.....	MIL-C-85285B,26118
Boiling Point.....	237-338 F
Flash Point.....	60 F TCC LEL:1%
Stability.....	YES
Stability Conditions to Avoid.....	CONTACT WITH MOISTURE, MATERIAL WHICH REACT WITH ISOCYANATES& HIGH TEMP
Materials to Avoid.....	WATER, AMINES, STRONG BASES, ALCOHOLS, METAL COMPOUNDS & SURFACE ACTIVE MATERIALS
Hazardous Decomposition Products.....	BY HIGH HEAT/TEMP: CARBON MONOXIDE, CARBON DIOXIDE, & OXIDESOF NITROGEN, TRACES OF HCN & HDI
LD50 - LD50 Mixture.....	N/R
Route of Entry: Skin.....	YES
Route of Entry: Inhalation.....	YES
Health Hazards - Acute & Chronic.....	ACUTE:VAPORS ARE IRRITATION TO EYES/NOSE/THROAT.INHALATION MAY CAUSE HEADACHES/DIFFICULT BREATHING/LOSS OF CONSCIOUNESS. CHRONIC:AS A RESULT OF PREVIOUS REPEATED OVEREXPOSURE OR A SINGLE LARGEDOSE, CERTAIN INDIVIDUALS WILL DEVELOP ISOCYANATE SENSITIZATION
Carcinogenity: NTP.....	NO
Carcinogenity: IARC.....	NO
Carcinogenity: OSHA.....	NO
Symptoms of Overexposure.....	INHALATION:IRRITATION TO RESP TRACT&ACUTE NERVOUS SYSTEM DEPRESSION/HEADACHES/DIZZINESS/STAGGERING GAIT/CONFUSION/UNCONSCIOUNESS/COMA. SKIN ISOCYANTES REACT WITH SKIN PROTEIN & MOISTURE CAN CAUSE IRRITATION. SWELLING/REDNESS/RASH. EYES: TEARING/REDNESS/RA
Medical Cond. Aggrevated by Exposure...	ASTHMA & ANY OTHER RESP DISORDERS. SKIN ALLERGIES/ECZEMA/DERMITITIS.ISOCYANATE SENSITIZATION.
Respiratory Protection.....	A RESP RECOMMENDED OR APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRON. OBSERVE OSHA REGULATIONS FOR RESP USE. VENTILATION SHOULD BE PROVIDED TO KEEP EXPOSURE LEVELS BELOW THE OSHA PERMISSIBLE LIMITS
Ventilation.....	EXHAUST VENTILATION SUFFICIENT TO KEEP THE AIRBORNE CONCENTRATIONS OF SOVENTS BELOW RESP LEVELS
Protective Gloves.....	YES/COTTON/NEOPRENE/RUBBER/POLYETHYLENE

Eye Protection..... YES/SPLASH GUARDS/SIDE SHIELDS/CHEMICAL
Supplemental Health/Safety Data..... USE OF LONG SLEEVE & LONG LEG CLOTHING IS RECOMMENDED REMOVE & WASH CONTAMINATED CLOTHING BEFORE REUSE

Ingredient #..... 01
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE MM HG .7
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 15
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 02
Ingredient Name..... ALIPHATIC ISOCYANATE
CAS Number..... 28182-81-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 03
Ingredient Name..... HEXAMETHYLENE DIISOCYANATE(HDI) FREE MONOMER CONTENT <.7% AFTER 3-6 MO STORAGE FREE MONOMER CONTENT RISE
CAS Number..... 822-06-02
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 1.6%
ACGHIH TLV..... .005CEILINGLEVEL.02P

Ingredient #..... 04
Ingredient Name..... ALIPHATIC ISOCYANATE
CAS Number..... 28182-81-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 25
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 05
Ingredient Name..... HEXAMETHYLENE DIISOCYANATE(HDI)FREE MONOMER CONTENT <.7% AFTER 3-6 MON STORAGE FREE MONOMER CONTENT RISE TO 1.6%
CAS Number..... 822-06-0
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <7-1.6
ACGHIH TLV..... .005 PPMCEILING .02P

Ingredient #..... 06
Ingredient Name..... C8&10 AROMATIC HYDROCARBON STEL = 150 PPM MM HG 3
CAS Number..... 64742-95-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 100 PPM

Ingredient #..... 07
Ingredient Name..... N-BUTYL ACETATE
STEL = 200 PPM MM HG 8.4
C umber..... 123-86-4
NI. H Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 150 PPM

Ingredient #..... 08
Ingredient Name..... METHYL ISOBUTYL KETONE STEL = 75 PPM
MM HG 15
CAS Number..... 108-10-1
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 35
ACGHIH TLV..... 50 PPM

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

Item Name	POLYURETHANE TYPE I, 36270
Number/Trade Name	POLYURETHANE #36270 GRAY
onal Stock Number	8010013443218
Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT, INC
City	IRVINE
State	CA
Country	US
Emergency Phone	1-800-424-9300 INFO 714-474-0400
Specification Number	MIL-C-85285B
Boiling Point	175-338 F
Flash Point	23 F
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	BY HIGH HEAT/TEMP:CARBON MONOXIDE, CARBON DIOXIDE & OXIDES OF NITROGEN
LD50 - LD50 Mixture	N/R
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
th Hazards - Acute & Chronic	ACUTE:VAPORS ARE IRRITATING TO EYES, NOSE & THROAT. INHALATION MAY CAUSE HEADACHES, DIFFICULT BREATHING & LOSS OF CONSCIOUSNESS.CHRONIC:PROLONGED CONTACT WILL CAUSE DRYING & CRACKING OF THE S KIN, DUE TO DEFATTING ACTION. SKIN SENSITIZATION, ASTHMA OR OTH
Carcinogenity: NTP	NO
Carcinogenity: IARC	NO
Carcinogenity: OSHA	NO
Symptoms of Overexposure	INHAL:IRRITATION OF RESP TRACT & ACUTE NSD, HEADACHE, DIZZINESS,STAGGERING GAIT, CONFUSION, UNCONSCIOUSNESS OR COMA. SKIN & EYE:IRRITATION, SWELLING, REDNESS & RASH, TEARING, STINGING. INGESTION:CORROSIVE IRRITATION ACTION IN MOUTH, STOMACH TISSUE & DIGES
Medical Cond. Aggrevated by Exposure	ASTHMA & ANY OTHER RESP DISORDERS. SKIN ALLERGIES,ECZEMA & DERMITITIS.
Respiratory Protection	A RESP THAT IS RECOMMENDED IS RECOMMENDED OR APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRON(AIR PURIFYING OR FRESH AIR SUPPLIED)IS NECESSARY. OBSERVE OSHA REGULATION FOR RESP USE.VENTILATION SHOULD BE BELOW THE EXPOSURE LIMITS.
ilation	EXHAUST VENTILATION SUFFICIENT. REMOVE IGNITION SOURCES.
ective Gloves	COTTON/NEOPRENE/RUBBER POLYETHYLENE
Eye Protection	SPLASH GUARDS/SIDE SHIELDS/CHEMICAL
Supplemental Health/Safety Data	USE OF LONG SLEEVE & LONG LEG CLOTHING IS RECOMMENDED. REMOVE & WASH

CONTAMINATED CLOTHING BEFORE REUSE. KEEP CONTAINERS TIGHT &UPRIGHT TO PREVENT LEAKAGE.

Ingredient #..... 00
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 150 PPM

Ingredient #..... 00
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 100 PPM

Ingredient #..... 00
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 100 PPM

Ingredient #..... 00
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 100 PPM

Ingredient #..... 00
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 200 PPM

Ingredient #..... 00
Ingredient Name..... PMGE ACETATE
CAS Number..... 108-65-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 00
Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <.1
ACGHIH TLV..... .1 MG/M3

Ingredient #..... 00
Ingredient Name..... 2-4 PENTANEDIONE
CAS Number..... 123-54-6
[illegible] Number..... N/R
[illegible]rietary..... NO
Percent..... <5
ACGHIH TLV..... UNDETERMINED

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#9B

MATERIAL SAFETY DATA SHEET

m Name	ALIPHATIC ISOCYANATE
..rt Number/Trade Name	ALIPH ISOCYANATE, TYPE I, 36270
National Stock Number	8010013443218
CAGE Code	33461
Part Number Indicator	B
Manufacturer Name	DEFT, INC
Emergency Phone	800-424-9300 INFO 714-474-0400
Specification Number	MIL-C-85285B
Boiling Point	237-338 F
Flash Point	60 F
Stability	YES
Stability Conditions to Avoid	CONTACT WITH MOISTURE OR MATERIAL WHICH REACT W/ISOCYANATES AND HIGH TEMPS
Materials to Avoid	WATER, AMINES, STRONG BASES, ALCOHOLS, METAL COMPOUNDS AND SURFACE ACTIVE MATERIALS.
Hazardous Decomposition Products	BY HIGH HEAT/TEMP:CARBON MONOXIDE, CARBON DIOXIDE AND OXIDESOF NITROGEN, TRACES OF HCN AND HDI.
LD50 - LD50 Mixture	N/R
te of Entry: Skin	YES
ite of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	VAPORS ARE IRRIT TO EYES,NOSE & THROAT. INHALATION MAY CAUSE HEADACHES,DIFFICULT BREATHING & UNCONSCIOUSNESS.RESULTS OF PREVIOUSOVEREXP OR SINGLE LRG DOSE-SOME PEOPLE W/DEVELOP ISOCYANATE SEN SITIZATION WHICH CAUSES REACTION TO LATER EXPOSURE OF ISOCYANAT
Carcinogenity: NTP	NO
Carcinogenity: IARC	NO
Carcinogenity: OSHA	NO
Symptoms of Overexposure	INHAL:IRRIT OF RESP TRACT & ACUTE NSD CHARACTERIZED BY HEADACHE,DIZZINESS,STAGGERING GAIT, CONFUSTION,UNCONSCIOUSNESS OR COMA.SKIN:IRRIT,SWELLING,REDNESS, DEFATTING. INGEST:IRRIT & POSSIBLE CORROSIVE ACTION IN MOUTH, STOMACH TISSUE & DIGESTIVE TRACT. VOMI
Medical Cond. Aggrevated by Exposure	ASTHMA & ANY OTHER RESPIRATORY DISORDERS, SKIN ALLERGIES, ECZEMA & DERMITITIS. ISOCYANATE SENSITIZATION.
Respiratory Protection	AIR SUPPLIED RESP IS RECOMMENDED(VAPOR PARTICULATE RESPIRATOR NIOSH/MSHA) MAY BE USED WHERE AIR MONITORING DEMONSTRATED VAPOR LEVELS BELOW 10 TE APPLICABLE EXPOSURE LIMITS.
Ventilation	EXHAUST VENT SUFFICIENT TO KEEP AIRBORN CONCENTRATIONS OF SOLVENT BELOW TLV'S MUST BE UTILIZED.
Protective Gloves	COTTON,NEOPRENE, RUBBER, POLYETHYLENE
Eye Protection	CHEMICAL GOGGLES OR FACE SHIELD

Supplemental Health/Safety Data..... 1ST AID:INHAL:REMOVE TO FRESH AIR, RESTORE BREATHING, SEEK MD. SKIN:WASH AREA WITH SOAP/WATER, WASH CONTAMINATED CLOTHING BEFOREREUSE. EYES:FLUSH W/WATER FOR 15 MINUTES, SEEK MD ATTN. INGEST:DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING TO AN UNCONSCIOUS P

Ingredient #..... 00
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... N/R

Ingredient #..... 00
Ingredient Name..... ALIPHATIC ISOCYANATE
CAS Number..... 28182-81-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... N/D

Ingredient #..... 00
Ingredient Name..... HEXAMETHYLENE DIISOCYANATE
CAS Number..... 822-06-02
NIOSH Number..... N/R
Pr[illegible]etary..... NO
P[illegible]t..... .7
A[illegible]H TLV..... N/E

Ingredient #..... 00
Ingredient Name..... C8-10 AROMATIC HYDROCARBON
CAS Number..... 64742-95-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 100 PPM

Ingredient #..... 00
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 150PPM

Ingredient #..... 00
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... N/R
Proprietary..... NO
Pe[illegible]t..... 40
C[illegible] TLV..... 50 PPM

NOTICE: If you require a complete, unabbreviated MSDS,

#107

MATERIAL SAFETY DATA SHEET

Item Name	POLYURETHANE C3GY321
P[illegible] Number/Trade Name	3:1,MIL-C-85285B,36173,TYPE I
[illegible]nal Stock Number	8010013456535
CA[illegible] Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT, INC
Emergency Phone	1-800-424-9300 INFO:714-474-0400
Specification Number	MIL-C-85285B,36173
Boiling Point	175 - 338 F
Flash Point	24 F TCC LEL:1%
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES,SPARKS, OR OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	BY HIGH HEAT/TEMP:CARBON MONOXIDE,CARBON DIOXIDE,& OXIDES OFNITROGEN
LD50 - LD50 Mixture	N/R
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	ACUTE:VAPORS ARE ITTITATING TO EYES,NOSE,THROAT. INHALATION MAY CAUSE HEADACHES,DIFFICULT BREATHING & LOSS OF CONSCIOUSNESS. CHRONIC:PROLONGED CONTACT WILL CAUSE DRYING & CRACKING OF THE SKIN,DUE TO DEFATTING ACTION. SKIN SENSITIZATION,ASTHMA OR OTHER ALL
Carcinogenity: NTP	NO
Carcinogenity: IARC	NO
Carcinogenity: OSHA	NO
Symptoms of Overexposure	INHALATION:IRRITATION OF RESP TRACT & ACUTE NERVOUS SYSTEM DEPRESSION,HEADACHE,DIZZINESS,STAGGERING GAIT,CONFUSION,UNCONSCIOUSNESS OR COMA. SKIN & EYE:IRRITATING,SWELLING,REDNESS,RASH,TEARING,STINGING,DEFATTING OF SKIN. INGESTION:CORROSIVE ACTION TO MOUTH
Medical Cond. Aggrevated by Exposure	ASTHMA & ANY OTHER RESPIRATORY DISOVERS. SKIN ALLERGIES, ECZEMA & DERMITITIS.
Respiratory Protection	RECOMMENDED OR APPROVED RESPIRATOR FOR ORGANIC VAPOR ENVIRON(AIR PURIFYING OR FRESH AIR SUPPLIED). OBSERVE OSHA REGULATIONS FOR RESP USE. VENTILATION SHOULD BE PROVIDED. IF TLV LIMITS BELOW OSHA LEVEL A RESP MAY NOT BE REQUIRED
Ventilation	EXHAUST VENT SUFFICIENT TO KEEP AIRBORNE CONCENTRATIONS BELOW TLV LIMIT.
Protective Gloves	COTTON,NEOPRENE,RUBBER POLYETHYLENE
F[illegible] Protection	CHEMICAL GOGGLES/SPLASH GUARDS,SIDE S[illegible]
S[illegible]emental Health/Safety Data	USE OF LONG SLEEVE & LONG LEG CLOTHI[illegible] IS RECOMMENDED. REMOVE & WASH CONTANIMATED CLOTHING BEFORE REUSE. 1ST AID:INHALATION:REMOVE TO FRESH AIR RESTORE BREATHING. ASTHMATIC TYPE

SYMPTOMS MAY DEVELOP. OBTAIN MED
ATTENTION. SKIN:WASH W/SOAP & WATER.
EYES:FL

edient #..... 01
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 03
Ingredient Name..... ANITSETTLING AGENT
CAS Number..... UNKNOWN
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... NOT ESTAB

edient #..... 04
edient Name..... TOLUENE
Number..... 108-88-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 100 PPM

Ingredient #..... 05
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 100 PPM

Ingredient #..... 06
Proprietary..... YES
Percent..... <1
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 07
Ingredient Name..... FLOW AGENT
CAS Number..... TRADE-SECRE
NIOSH Number..... N/R
rietary..... NO
ent..... <1
IH TLV..... UNDETERMINED

Ingredient #..... 08
Ingredient Name..... METHYL ISOBUTYL KETONE

CAS Number..... 108-10-1
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGIH TLV..... 50 PPM

Ingredient #..... 09
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 200 PPM

Ingredient #..... 10
Ingredient Name..... ANTI MAR AGENT
CAS Number..... UNKNOWN
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... NOT ESTAB

Ingredient #..... 11
Ingredient Name..... ETHYL BENZENE
CAS Number..... 100-41-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... 100 PPM

Ingredient #..... 12
Ingredient Name..... FLOW AGENT
CAS Number..... UNKNOWN
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 13
Ingredient Name..... PMGE ACETATE
CAS Number..... 108-65-6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 14
Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... .1MG/M3

Ingredient #..... 15
Ingredient Name..... 2-4 PENTANEDIONE
CAS Number..... 123-54=6
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5

ACGHIH TLV..... UNDETERMINED

:E: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#10D

MATERIAL SAFETY DATA SHEET

Item Name	ISOCYANATE
P[illegible] Number/Trade Name	ISOCYANATE 03GY321CAT 3:1,CAT,MIL-C-85285,36173,TYPE
N[illegible]onal Stock Number	8010013456535
CAGE Code	33461
Part Number Indicator	B
Manufacturer Name	DEFT, INC
Street	17451 VON KARMAN AVE
City	IRVINE
State	CA
Zip Code	92714
Emergency Phone	800-424-9300
Information Phone	714-474-0400
Specification Number	MIL-C-85285,36173
Boiling Point	260 - 338 F
Flash Point	76 F TCC LEL:1%
Stability	YES
Stability Conditions to Avoid	CONTACT W/MOISTURE,MATERIAL WHICH REACT WITH ISOCYANATES & HIGH TEMPERATURES.
Materials to Avoid	WATER, AMINES,STRONG BASES, ALCOHOLS,METAL COMPOUNDS & SURFACE ACTIVE MATERIALS.
[illegible]rdous Decomposition Products	BY HIGH HEAT/TEMP:CARBON MONOXIDE,CA[illegible]N DIOXIDE,& OXIDES OFNITROGEN,TRACES O HCN & HDI.
LD50 - LD50 Mixture	N/R
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	ACUTE:VAPORS AREA IRRITATING TO EYES,NOSE & THROAT. INHALATION MAY CAUSE HEADACHE,DIFFICULT BREATHING & LOSS OF CONSCIOUSNESS. CHRONIC:AS A RESULT OF PREVIOUS REPEATED OVEREXPOSURE OR A SINGLELARGE DOSE,CERTAIN INDIVIDUALS WILL DEVELOP ISOCYANATE SENSITIZ
Carcinogenity: NTP	NO
Carcinogenity: IARC	NO
Carcinogenity: OSHA	NO
Symptoms of Overexposure	INHALATION:IRRITATION OF RESP TRACT & ACUTE NERVOUS SYSTEM DEPRESSION,HEADACHE,DIZZINESS,STAGGERING GAIT,CONFUSION,UNCONSCIOUNESS OR COMA. SKIN:IRRITATION,SWELLING,REDNESS & RASH. DEFATTING. EYE,IRRITATING,TEARING,REDNESS,STINING. INGESITON:CORROSIVE ACTI
Medical Cond. Aggrevated by Exposure	ASTHMA & ANY OTHER RESPIRATORY DISORDERS. SKIN ALLERGIES,ECZEMA & DERMATITIS. ISOCYANATE SENSITIZATION
Respiratory Protection	VENTILATION SHOULD BE PROVIDED. AN A[illegible] SUPPLIED RESP IS RECOMMENDED. A VAPOR PARTICULATE FULL FACE RESP(TC23C NIOSH/MSHA) MAY BE APPROPRIATE WHERE AIR

MONITORING DEMONSTRATES LEVELS BELOW TEN TIMES THE APPLICABLE EXPOSURE LIMITS.

Ventilation..... EXHAUST VENT SUFFICIENT TO KEEP CONCENTRATIONS OF SOLVENTS BELOW TLV.

ective Gloves..... COTTON,NEOPRENE,RUBBER,POLYEHTLENE YES

Protection..... SPLASH GUARDS OR SIDE SHIELDS,CHEM GOGGL

Supplemental Health/Safety Data..... USE OF LONG SLEEVE & LONG LEG CLOTHING IS RECOMMENDED. REMOVE CONTAMINATED CLOTHING & WASH. FIRST AID:INHALATION:REMOVE TO FRESHAIR,ASTHMATIC TYPE SYMPTOMS MAY DEVELOP OBTAIN MEDICAL ATTENTIO N. SKIN:WASH W/SOAP & WATER. EYES:FLUSH W/WATER WARM FOR 15 MIN

Ingredient #..... 01
Ingredient Name..... ALIPHATIC ISOCYANATE
CAS Number..... 28182-81-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 35
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 02
Ingredient Name..... HEXAMETHYLENE DIISOCYANATE (HDI) 7% AT MANUFACTURER AFTER 3-6 MONTHS STORAGE CHANGES TO1.6% MOBAY RECOMMENDS .02 PPM
CAS Number..... 822-06-02
H Number..... N/R
rietary..... NO
rcent..... 1.6
ACGHIH TLV..... .005 PPM

Ingredient #..... 03
Ingredient Name..... ALIPHATIC ISOCYANATE
CAS Number..... 28182-81-2
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 40
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 04
Ingredient Name..... HEXAMETHYLENE DIISOCYANATE (HDI) <.7% AT TIME OF MANUFACTUREAFTER 3-6 MO CHANGES TO 1.6% MOBAY RECOMMENDS LEVEL .02 PPM
CAS Number..... 822-06-0
NIOSH Number..... N/R
Proprietary..... NO
Percent..... .7
ACGHIH TLV..... .005 PPM

Ingredient #..... 05
Ingredient Name..... C8&10 AROMATIC HYDROCARBON
Number..... 64742-95-6
H Number..... N/R
prietary..... NO
Percent..... <5
ACGHIH TLV..... UNDETERMINED

Ingredient #..... 06
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... N/R
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 150 PPM

Ingredient #..... 07
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 20
ACGHIH TLV..... UNDETERMINED

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

Item Name	WATER BORNE PRIMER S.C. 910X831
Number/Trade Name	WATER BORNE PRIMER C.S. 910X831
onal Stock Number	8010L00006F
Code	85570
Part Number Indicator	A
Manufacturer Name	COURTAULDS AEROSPACE
P.O.Box	N/R
Street	1608 FOURTH STREET
City	BERKELEY
State	CA
Country	US
Zip Code	94710
Emergency Phone	(800)2285635
Information Phone	(818)549-7823
MSDS Preparer Name	N/R
Street	1608 FOURTH STREET
City	BERKELEY
State	CA
Zip Code	94710
Vendor #1 Name	N/R
Vendor #1 CAGE	N/R
Vendor #2 Name	N/R
Vendor #2 CAGE	N/R
Vendor #3 Name	N/R
or #3 CAGE	N/R
or #4 Name	N/R
ndor #4 CAGE	N/R
Vendor #5 Name	N/R
Vendor #5 CAGE	N/R
Specification Number	N/R
Specification Type/Grade/Class	N/R
Appearance/Odor	LIQUID, SOLVENT ODOR
Boiling Point	212-340 F.
Melting Point	N/R
Vapor Pressure	N/R
Specific Gravity	1.01
Decomposition Temperature	N/R
Evaporation Rate	< N-BUTYL ACETATE
Solubility in Water	N/R
Percent Volatiles by Volume	82.0 %
Chemical PH	N/R
Corrosion Rate	N/R
Flash Point	> 200 DEG. F.
Flash Point Method	N/R
Lower Explosive Limit	1.1 %
Upper Explosive Limit	N/R
Extinguishing Media	USE NATIONAL FIRE PROTECTION ASSOCIATION CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL OR FOAM).
cial Fire Fighting Procedures	COOL FIRE EXPOSED CONTAINERS W/WATER. WEAR NIOSH/MSHA APPVD. SCBA APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

Unusual Fire/Explosion Hazards.....	CLOSED CONTAINERS MAY RUPTURE/EXPLODE WHEN EXPOSED TO EXTREME HEAT.
Stability.....	YES
Stability Conditions to Avoid.....	FIRE OR EXCESSIVE HEAT
Materials to Avoid.....	NONE RECOGNIZED
Hazardous Decomposition Products.....	CARBON, CARBON MONOXIDE, CARBON DIOXIDE.
Hazardous Polymerization.....	NO
Polymerization Conditions to Avoid.....	NO
LD50 - LD50 Mixture.....	N/R
Route of Entry: Skin.....	YES
Route of Entry: Ingestion.....	YES
Route of Entry: Inhalation.....	YES
Health Hazards - Acute & Chronic.....	INHALATION: NOT EXPECTED TO BE HAZARDOUS UNDER NORMAL USE CONDITIONS. SKIN: MAY CAUSE MILD IRRITATION. EYES:MAY CAUSE MILD IRRITATION. INGEST: MAY CAUSE GASTROINTESTINAL IRRIT.
Carcinogenity: NTP.....	N/R
Carcinogenity: IARC.....	N/R
Carcinogenity: OSHA.....	N/R
Symptoms of Overexposure.....	STUDIES IN EXPERIMENTAL ANIMALS HAVE PRODUCED DAMAGE TO THE RED BLOOD CELL BY INHALATION, SKIN ABSORPTION AND INGESTION OF 2-PROPOXYETHANOL. OVEREXPOSURE TO A COMPONENT OF THIS PRODUCT MAY CAUSE LIVER AND KIDNEY DAMAGE.
Medical Cond. Aggrevated by Exposure...	PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS.
Emergency/First Aid Procedures.....	INHALATION: REMOVE FROM EXPOSURE TO FRESH AIR. GIVE ARTIF. RESPIR., CPR, OXYGEN IF NECESS. KEEP WARM/QUIET. GET MED. ATTN. SKIN: WASH AFFECTED AREA W/SOAP & WATER. USE NO SOLVENTS. GET MED. ATTN. EYES: FLUSH W/WATER 15 MINS. GET MED. ATTN. INGESTION: GET MED. ATTN. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE.
Steps if Material Released/Spilled.....	WEAR PPE TO AVOID BRERATHING VAPORS AND SKIN AND EYE CONTACT WITH THE SPILLED MATERIAL. FOR SMALL SPILLS, DIKE AND ABSORB WITH INERT MATERIAL. USE EMERGENCY RESPONSE PROFESSIONALS IF MANAGING A RELEASE IS BEYOND THE CAPABILITY OF IN-HOUSE PERSONNEL.
Neutralizing Agent.....	N/R
Waste Disposal Method.....	THIS MATERIAL IS NOT CLASSIFIED AS AN IGNITABLE HAZARDOUS WASTE ACCORDING TO FEDERAL REGULATIONS. NO DISPOSAL METHOD SHOULD BE USED WHICH WOULD POSE AN ENVIRONMENTAL OR HUMAN HEALTH THREAT INCLUDING ANY WHICH WOULD CONTAMINATE GROUND OR SURFACE WATER
Handling & Storage Precautions.....	KEEP CONTAINER TIGHTLY CLOSED.
Other Precautions.....	DO NOT TAKE INTERNALLY. PREVENT CONTACT WITH CONTAMINATED CLOTHING. WASH CONTAMINATED CLOTHING BEFORE REUSE.

FOLLOW LABEL WARNINGS.

Respiratory Protection..... NOT REQUIRED UNDER NORMAL OPERATING CONDITIONS. IN AREAS WHERE TLVS IN SECTION II MAY BE EXCEEDED OR IF SPRAY MIST IS PRESENT, USE NIOSH/MSHA APPRVD. AIR SUPPLIED RESPIRATORS. FOLLOW RESPIRATOR MANUFACTURERS DIRECTIONS AND OSHA REGULATIONS.

Ventilation..... PROVIDE ADEQUATE GENERAL DILUTION OR LOCAL EXHAUST VENTILA- TION TO MINIMIZE EMPLOYEE EXPOSURE.

Protective Gloves..... CHEMICAL RESISTANT GLOVES

Eye Protection..... SAFETY GLASSES W/SIDESHIELDS, GOGGLES

Other Protective Equipment..... AVOID SKIN CONTACT BY USE OF PROTECTIVE CLOTHING. A SAFETY SHOWER, EYE BATH & WASHING FACILITIES SHOULD BE AVAILABLE.

Work Hygenic Practices..... WASH CONTAMINATED CLOTHING BEFORE REUSE

Supplemental Health/Safety Data..... ANIMALS RECEIVING REPEATED DOSES OF 2-BUTOXYETHANOL DEVELOPED HEMOLYTIC ANEMIA AND SECONDARY INJURY TO THE KIDNEY AND LIVER.

Ingredient #..... 1
Proprietary..... YES
Percent..... 20. %
OSHA PEL..... UNDETERMINED
ACGHIH TLV..... UNDETERMINED
Recommended Limit..... N/R

edient #..... 2
ngredient Name..... 2-PROPOXYETHANOL
CAS Number..... 002807309
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 15. %
OSHA PEL..... UNDETERMINED
ACGHIH TLV..... UNDETERMINED
Recommended Limit..... N/R

Ingredient #..... 3
Proprietary..... YES
Percent..... < 5. %
OSHA PEL..... UNDETERMINED
ACGHIH TLV..... UNDETERMINED
Recommended Limit..... N/R

Ingredient #..... 4
Ingredient Name..... 2-BUTOXYETHANOL
CAS Number..... 000111762
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 15. %
OSHA PEL..... 25 SKIN
IH TLV..... 25 SKIN
mmended Limit..... N/R

Ingredient #..... 5
Ingredient Name..... WATER
CAS Number..... 007732185

NIOSH Number..... N/R
Proprietary..... NO
Percent..... 50. %
OSHA PEL..... UNDETERMINED
ACGIH TLV..... UNDETERMINED
Recommended Limit..... N/R

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#12

MATERIAL SAFETY DATA SHEET

Item Name..... DESOTHANE 420 HS FAST DRY
Number/Trade Name..... DESOTHANE 420 HS FST DRY 821X830
onal Stock Number..... 8010P400017F
Code..... 85570
Part Number Indicator..... A

Manufacturer Name..... COURTAULDS AEROSPACE
P.O.Box..... N/R
Street..... 1608 4TH STREET
City..... BERKELEY
State..... CA
Country..... US
Zip Code..... 94710
Emergency Phone..... 800-328-3633
Information Phone..... 415-526-1525

MSDS Preparer Name..... N/R
Street..... 1608 FOURTH STREET
City..... BERKELEY
State..... CA
Zip Code..... 94710
Date MSDS Prepared/Revised..... 102993

Vendor #1 Name..... N/R
Vendor #1 CAGE..... N/R
Vendor #2 Name..... N/R
Vendor #2 CAGE..... N/R
or #3 Name..... N/R
or #3 CAGE..... N/R
endor #4 Name..... N/R
Vendor #4 CAGE..... N/R
Vendor #5 Name..... N/R
Vendor #5 CAGE..... N/R

Specification Number..... N/R
Specification Type/Grade/Class..... N/R

Appearance/Odor..... WHITE LIQUID, SOLVENT ODOR
Boiling Point..... 213-300 F.
Melting Point..... N/R
Vapor Pressure..... N/R
Specific Gravity..... 1.50
Decomposition Temperature..... N/R
Evaporation Rate..... < N-BUTLY ACETATE
Solubility in Water..... N/R
Percent Volatiles by Volume..... 37.8
Chemical PH..... N/R
Corrosion Rate..... N/R
Flash Point..... 49 F.
Flash Point Method..... SETA
Lower Explosive Limit..... 1 %
Upper Explosive Limit..... N/R
nguishing Media..... CARBON DIOXIDE, DRY CHEMICAL OR FOAM
cial Fire Fighting Procedures..... WEAR NIOSH/MSHA APPRVD. SCBA. AVOID SKIN EYE CONTACT. WATER SPRAY MAY BE INEFFECT. FOG NOZZLES PREFERRABLE. COOL FIRE EXPOSED CONTAINERS W/WATER.
Unusual Fire/Explosion Hazards..... VAPORS MAY ACCUMULATE IN INADEQUATELY

	VENTILATED/CONFINED AREAS. VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. VAPORS MAY TRAVEL LONG DISTANCES.
Stability.....	YES
Stability Conditions to Avoid.....	NONE RECOGNIZED
Materials to Avoid.....	NONE RECOGNIZED
Hazardous Decomposition Products.....	PRODUCTS OF COMBUSTION ARE HAZARDOUS INCLUDING CARBON MONOXIDE AND CARBON DIOXIDE.
Hazardous Polymerization.....	NO
Polymerization Conditions to Avoid.....	NO
LD50 - LD50 Mixture.....	N/R
Route of Entry: Skin.....	YES
Route of Entry: Ingestion.....	YES
Route of Entry: Inhalation.....	YES
Health Hazards - Acute & Chronic.....	INHAL.: NASAL & RESPIR. IRRIT. & ACUTE CNS DEPRESS., HEADACHE, DIZZINESS, STAGG. GAIT, UNCONSCIOUS., ASPHYXIATE. SKIN: IRRIT., DEFATT., DERMATITIS. EYE: IRRIT. INGESTION: MAY CAUSE GASTROINTESTINAL IRRIT., NAUSEA, VOMITING AND DIARRHEA.
Carcinogenity: NTP.....	N/R
Carcinogenity: IARC.....	N/R
Carcinogenity: OSHA.....	N/R
Symptoms of Overexposure.....	INHAL.:MAY CAUSE NASAL & RESPIR. IRRIT. & ACUTE CNS DEPRESS.,HEADACHE,DIZZINESS,STAG.GAIT,CONFUSION,UNCONSIOUS. SKIN: IRRIT.,DERMATITIS,DEFATTING,SKIN SENSITIZATION. EYES: IRRIT. INGEST.: GASTROINTESTINAL IRRIT.,NAUSEA,VOMITING AND DIARRHEA.
Medical Cond. Aggrevated by Exposure...	PRE-EXISTING SKIN, LUNG AND EYE CONDITIONS.
Emergency/First Aid Procedures.....	INHAL: REMOVE TO FRESH AIR. ARTIF. RESPIR., CPR, OXYGEN IF REQUIRE. KEEP WARM & QUIET. GET MED. ATTN. SKIN: WASH W/SOAP & WATER. NO SOLVENTS. GET MED. ATTN. EYES: FLUSH W/WAETR FOR 15 MINS. GET MED. ATTN. INGEST: GET MED. ATTN. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE.
Steps if Material Released/Spilled.....	REMOVE ALL SOURCES IGNITION. WEAR PPE AVOID BREATH VAPORS & SKIN & EYE CONTACT. USE NON-SPARKING TOOLS. USE EMERGENCY RESPONSE PROFESSIONAL IF MANAGING A RELEASE IS BEYOND THE CAPABILITY OF IN-HOUSE PERSONNEL. SMALL SPILL: DIKE & ABSORB W/INERT MATL.
Neutralizing Agent.....	ABSORB WITH INERT MATERIAL.
Waste Disposal Method.....	ENSURE THAT IT IS PACKAGED,STORED,TRANSPORTED & OTHERWISE MANAGED IAW LOCAL,STATE & FEDERAL REGULATIONS. NO DISPOSAL METHOD IS T USED THAT WOULD POSE AN ENVIRON., OR HUMAN HEALTH THREAT INCLUDING ANY WHICH CONTAMINATE GROUND OR SURFACE WATER.
Handling & Storage Precautions.....	KEEP CONTAINER TIGHTLY CLOSED. ISOLATE

Other Precautions.....	FROM HEAT, ELECTRICAL EQUIP. SPARKS & FLAME. DO NTO STORE ABOVE 49 DEG C (120 DEG. F.).GROUND WHEN TRANSFERRING EMPTY DRUMS MAY CONTAIN EXPLOSIVE VAPORS. DO NOT CUT , PUNCTURE OR WELD ON OR NEAR DRUM. DO NOT TAKE INTERNALLY. DO NOT INHALE VAPORS. VAPORS MAY COLLECT IN LOW/CONFINED AREAS. DO NOT ENTER SUCH AREAS WITHOUT FOLLOW. APPROPRIATE PROCEDURE
Respiratory Protection.....	USE NIOSH/MSHA APPRVD. RESPIR. PROTECTION APPROPRIATE FOR INDICATED COMPONENTS. IN CONFINED AREAS USE NIOSH/MSHA APP-ROVED AIR SUPPLIED RESPIRATORS. FOLLOW RESPIRATOR MANUFACTURER'S DIRECTIONS AND OSHA REGUALTIONS FOR USE.
Ventilation.....	PROVIDE GENERAL DILUTION OR LOCAL EXHAUST VENTILATION IN VOLUME AND PATTERN TO KEEP LEVEL OF HAZARDOUS INGREDIENTS BE
Protective Gloves.....	WEAR CHEMICALLY RESISITANT GLOVES
Eye Protection.....	SAFETY GLASSES W/SIDE SHIELDS/GOGGLES.
Other Protective Equipment.....	AVOID SKIN CONTACT BY USE OF OTHER PROTECTIVE CLOTHING. A SAFETY SHOWER AND EYE BATH SHOULD BE AVAILABLE.
Work Hygenic Practices.....	WASHING FACILITIES SHOULD BE AVAILABLE.
Supplemental Health/Safety Data.....	CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT SMOKE. AVOID PROLONGED AND REPEATED CONTACT W/THIS PRODUCT. REPORTS HAVE ASSOCIATED REPEATED & PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN & NS DAMAGE.

Ingredient #.....	1
Ingredient Name.....	METHYL N-AMYL KETONE
CAS Number.....	000110430
NIOSH Number.....	N/R
Proprietary.....	NO
Percent.....	10. %
OSHA PEL.....	100 PPM
ACGHIH TLV.....	50 PPM
Recommended Limit.....	N/R

Ingredient #.....	2
Ingredient Name.....	POLYESTER RESIN
CAS Number.....	085959882
NIOSH Number.....	N/R
Proprietary.....	NO
Percent.....	20. %
OSHA PEL.....	UNDETERMINED
ACGHIH TLV.....	UNDETERMINED
Recommended Limit.....	N/R

Ingredient #.....	3
Ingredient Name.....	TITANIUM DIOXIDE @

CAS Number..... 013463677
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 45. %
PEL..... 10
ACGIH TLV..... 10 MG/M3
Recommended Limit..... N/R

Ingredient #..... 4
Ingredient Name..... METHYL PROPYL KETONE
CAS Number..... 000107879
NIOSH Number..... N/R
Proprietary..... NO
Percent..... 5. %
OSHA PEL..... 200 PPM
ACGHIH TLV..... 200 PPM
Recommended Limit..... N/R

Ingredient #..... 5
Proprietary..... YES
Percent..... 15. %
OSHA PEL..... UNDETERMINED
ACGHIH TLV..... UNDETERMINED
Recommended Limit..... N/R

Ingredient #..... 6
Ingredient Name..... TOLUENE
CAS Number..... 000108883
NIOSH Number..... N/R
Proprietary..... NO
Percent..... < 1. %
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM
Recommended Limit..... N/R

Ingredient #..... 7
Ingredient Name..... BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDINYL SEPACATE
CAS Number..... 041556267
NIOSH Number..... N/R
Proprietary..... NO
Percent..... < 5.%
OSHA PEL..... UNDETERMINED
ACGHIH TLV..... UNDETERMINED
Recommended Limit..... N/R

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

#15

MATERIAL SAFETY DATA SHEET

Item Name	POLYURETHANE
Part Number/Trade Name	MIL-C-85285B,34102 TYPE I POLYURETHANE
nal Stock Number	8010P887670F
Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT, INC.
Emergency Phone	714-474-0400
Specification Number	C-85285B,34102,G/S I
Boiling Point	175-338 F
Flash Point	23 DEG F TCC
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES, SPARKS, OR OPEN FLAMES
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	BY HIGH HEAT/TEMPERATURE:CARBON MONOXIDE, CARBON DIOXIDE, AND OXIDES OF NITROGEN
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	A:VAPORS ARE IRRITATING TO THE EYES,NOSE,AND THROAT.INHALATION MAY CAUSE HEADACHES,DIFFICULT BREATHING AND LOSS OF CONSCIOUSNESS;C:PROLONGED CONTACT WILL CAUSE DRYING AND CRACKING OF THE SKIN,DUE TO DEFATTING ACTION.SKIN SENSITIZATION,ASTHMA OR OTHER ALLE
Carcinogenity: NTP	NR
Carcinogenity: IARC	NR
Carcinogenity: OSHA	NR
Symptoms of Overexposure	INHALATION:IRRITATION,HEADACHE,DIZZINESS ,STAGGERING GAIT,CONFUSION,UNCONSCIOUSNESS OR COMA;SKIN:IRRITATION,SWELLING,REDNESS,RE ASH;EYES:IRRITATION,TEARING,REDNESS, AND SWELLING,STINGING;INGESTION:IRRITATION&P OSS.CORROSIVE ACTION IN THE MOUTH,STOMACH TISSUE
Medical Cond. Aggrevated by Exposure	ASTHMA,RESPIRATORY DISORDERS,SKIN ALLERGIES,ECZEMA, AND DERMITITIS
Respiratory Protection	A RESPIRATOR THAT IS RECOMMENDED OR APROVED FOR USE IN AN ORGANICOVAPOR ENVIRONMENT(AIR PURIFYING OR FRESH AIR SUPPLIED)IN NECESSARY.USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED
Ventilation	EXHAUST VENTILATION SUFFICIENT TO KEEP THE AIRBORNE CONCENTRATIONS BELOW TLV LEVELS.IN ALL CASES OF OVEREXOSURE,CALL DOC
ective Gloves	COTTON/NEOPRENE/RUBBER POLYETHYLENE
Eye Protection	SIDDE SHIELDS/CHEM.GOGGLES/FACE SHIELD
Supplemental Health/Safety Data	1ST AID:INHALATION:REMOVE TO FRESH AIR.RESTORE BREATHING.ASTHMATIC SYMPTOMS

DELAYED,SEE A DOCTOR;SKIN:WASH WITH SOAP&WATER.SEE ADOC;EYES:FLUSH WITH WATER FOR 15 MINUTES.OBTAIN MEDICAL ATTENTI ON;INGESTION:DO NO INDUCE VOMITING.DO NOT GIVE ANYTHING BY MOU.

Ingredient #..... 01
Ingredient Name..... N-BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... 5
ACGHIH TLV..... 150 PPM

Ingredient #..... 02
Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1
A TH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... 50 PPM

Ingredient #..... 05
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... 200 PPM

Ingredient #..... 06
Ingredient Name..... PMGE ACETATE
CAS Number..... 108-65-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1
ACGHIH TLV..... NR

edient #..... 07
Ingredient Name..... DIBUTYLTINE DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR
Proprietary..... NO

Percent..... <0.1
ACGHIH TLV..... .1 MG/M3

Ingredient #..... 08
Ingredient Name..... 2-4 PENTANEDIONE
CAS Number..... 123-54-6
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5
ACGHIH TLV..... NR

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

MATERIAL SAFETY DATA SHEET

:em Name.....	ALIPHATIC ISOCYANATE
:r Number/Trade Name.....	CAT,MIL-C-85285B,34102,G/S,TYP ALIPHATIC ISOCYANATE
:t .l Stock Number.....	8010P887670F
GE Code.....	33461
:rt Number Indicator.....	B
:nufacturer Name.....	DEFT, INC.
:ergency Phone.....	714-474-0400
:ecification Number.....	C-85285B,34102,G/S
:iling Point.....	237-338 F
.ash Point.....	60 DEG F TCC
:ability.....	YES
:ability Conditions to Avoid.....	CONTACT WITH MOISTURE,MATERIAL WHICH REACT WITH ISOCYANATES AND HIGH TEMPERATURES
:terials to Avoid.....	WATER,AMINES,STRONG BASES,ALCOHOLS,METAL COMPOUNDS AND SURFACE ACTIVE MATERIALS
:zardous Decomposition Products.....	BY HIGH HEAT/TEMPERATURE:CARBON MONOXIDE,CARBON DIOXIDE; ANDOXIDES OF NITROGEN, TRACES OF HCN AND HDI
:50 - LD50 Mixture.....	NR
:ute of Entry: Skin.....	YES
:ut of Entry: Inhalation.....	YES
:a Hazards - Acute & Chronic.....	A:VAPORS ARE IRRITATING TO EYES,NOSE,AN THROAT.INHALATION MAY CAUSE HEADACHES,DIFFICULT BREATHING AND LOSS OF CONSCIOUSNESS;C: REPEATED OVEREXPOSURE OR A SINGLE LG DOSE, CERTAIN INDIVIDUALS WILL DEVELOP ISOCYANATE SENSITIZATION WHICH WILL CAUSE THEM TO R
:rcinogenity: NTP.....	NR
:rcinogenity: IARC.....	NR
:rcinogenity: OSHA.....	NR
:mptoms of Overexposure.....	INHALATION:IRRITATION,HEADACHE,DIZZINESS ,STAGGERING GAIT,CONFUSION,UNCONSCIOUSNESS OR COMA;SKIN:IRRITATION,SWELLING,REDNESS,ST INGING;EYES:IRRITATION,TEARING,REDNESS,S WELLING,STINGING;INGESTION:IRRITATION,PO SS.CORROSIVE ACTION IN THE MOUTH,STOMACH TISSUE,D
:dical Cond. Aggrevated by Exposure...	ASTHMA,RESPIRATORY DISORDERS,SKIN ALLERGIES,ECZEMA,DERMITITIS.ISOCYANATE SENSITIZATION
:spiratory Protection.....	A RESPIRATOR APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRONMENT(AIR PURIFYING OR FRESH AIR SUPPLIED)IS NECESSARY. USE NIOSH APPROVED RESPIRATOR WHEN TLV LEVELS ARE EXCEEDED
:ntilation.....	EXHAUST VENTILATION SUFFICIENT TO KEEP THE AIRBORNE CONCENTRATIONS BELOW THEIR RESPECTIVE TLV LIMITS, IS NECESSSARY

rotective Gloves..... COTTON/NEOPRENE/RUBBER/POLYETHYLENE
ye Protection..... SPLASH GUARD/CHEM.GOGGLES/FACE SHIELD
upplemental Health/Safety Data..... 1ST AID:INHALATION:REMOVE TO FRESH AIR.RESTORE BREATHING.GET MEDICAL ATTENTION;SKIN:WASH WITH SOAP&WATER.SEE DOC;EYES:FLUSH WITHWATER FOR 15 MINUTES.SEE A DOCTOR;INGESTION:DO NOT INDUCE VOMIT ING.NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.GET M

ngredient #..... 01
ngredient Name..... ETHYL 3-ETHOXYPROPIONATE
AS Number..... 763-69-9
IOSH Number..... NR
roprietary..... NO
ercent..... 20
CGHIH TLV..... NR

ngredient #..... 02
ngredient Name..... ALIPHATIC ISOCYANATE
AS Number..... 28182-81-2
IOSH Number..... NR
roprietary..... NO

ngredient #..... 03
ngredient Name..... ALIPHATIC ISOCYANATE**
AS Number..... 28182-81-2
IOSH Number..... NR
r etary..... NO
t..... 20
H TLV..... NR

ngredient #..... 04
ngredient Name..... C8&10 AROMATIC HYDROCARBON
AS Number..... 64742-95-6
IOSH Number..... NR
roprietary..... NO
ercent..... <5
CGHIH TLV..... 100 PPM

ngredient #..... 05
ngredient Name..... N-BUTYL ACETATE
AS Number..... 123-86-4
IOSH Number..... NR
roprietary..... NO
ercent..... <5
CGHIH TLV..... 150 PPM

ngredient #..... 06
ngredient Name..... METHYL ISOBUTYL KETONE
AS Number..... 108-10-1
IOSH Number..... NR
roprietary..... NO
nt..... 35
TLV..... 50 PPM

OTICE: If you require a complete, unabbreviated MSDS,

call Bioenvironmental Engineering.

Emissions Rate: 204,360 lb/yr × 454 gr/lb × 1 yr/52 wks × 1 wk/5 days × 1 day/18 hrs × 1 hr/60 min × 1 min/60 sec

= 5.51 gr/sec

Paint 1 lb/gal = 3.4 lb VOC/gal – 7.6 lb Solids

Paint = 31% VOC 69% Solid

VOC = 204,360 × .31 = 63,351.6 lb/yr

Solids = 204,360 × .69 = 141,008.4 lb/yr

VOC Emission Rate = 63,351.6 lb × 454 g/lb × 1 y/52 wk × 1 wk/5 day × 1 day/18 hr × 1 hr/60 min × 1 min/60 sec

= 1.71 gr/sec VOC

Solids Assume 75% on part and 25% overspray

141,008.4 lb solid × .25 = 35,252.1

Assume 90% capture and 10% escapes stack

35,252.1 lb solid × .10 = 3,525.21 lb solid

Solid Emission Rate = 3,525.21 lb/yr × 454 g/lb × 1 yr/52 wk × 1 wk/5 day × 1 day/18 hr × 1 hr/60 min × 1 min/60 sec

= .095 g/sec

Stack Height 18 @ 45'
6 @ 45'
6 @ 30'
2 @ 30'

ave stack height = 41.25 ft = 12.53 m

Stack Diameter 18@ 48"
6@ 60"
6 @ 36"
2 @ 48"

ave stack Φ = 48" = 1.2192 m

Velocity 110 ft/min = .56 m/sec

Distance to fence ≈ 4,600' = 1,402 m

Building Dimensions 415' x 240' x 45

VOC @ Fence 61.87 ug/m³
Solids @ Fence 3.437 ug/m³

3 part to 1 part mix

Butyl Acetate	11.0	
Ethyl 3-Ethoxypropionate	9.1	
Xylene	1.6	
Methyl Isobutyl Ketone	41.2	
MEK	8.3	
Toluene	1.7	
Mineral Spirits	1.7	
2-4 Pentandione		24
Ethyl Benzene	1.7	
Anti Float		5
Proprietary		5
Anti Mar Agent		5
SW Agent		5
Ethyl 3-Ethoxypropionate	11	
Aliphatic Isocyanates		56
C_8 - C_{10} Aromatic	2.7	
	100	100

VOC 61.87 mg/m³

Butyl Acetate = 61.87 × .11 = 6.81 mg/m³ = 1.31 ppb < 1.5ppm

Ethyl 3-Ethoxypropionate = 61.87 × .191 = 11.82 mg/m³ no TLV

Xylene = 61.87 × .016 = .99 mg/m³ < 4.35 mg/m³

IK = 61.87 × .412 = 25.49 mg/m³ < 2.05 mg/m³

MEK = 61.87 × .083 = 5.13 mg/m³ < 5.9 mg/m³

Toluene 61.87 × .017 = 1.05 mg/m³ < 3.75 mg/m³

Mineral Spirits 61.87 × .017 = 1.05 mg/m³ TLV Not Established

Ethyl Benzene 61.87 × .017 = 1.05 mg/m³ TLV 100 ppm

C_8-C_9 Aromatic 61.87 × .027 = 1.67 mg/m³ = .34 ppb < 1 ppm

Solids @ Fence .095 mg/m³

2-4 Pentanedione .095 × .24 = .0228 mg/m³ TLV Not Est

Anti Float .095 × .05 = .0048 mg/m³ TLV Not Est
pigtary
Anti Mar
Flow

Aliphatic Isocyanate = .095 × .56 = .0532 mg/m³ = ~~.0078 ppb < .05 ppb~~ .007 ppb < .05 ppb

*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED 88300 ***

220 VOC

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.710
STACK HEIGHT (M)	=	12.53
STK INSIDE DIAM (M)	=	1.22
STK EXIT VELOCITY (M/S)	=	.56
STK GAS EXIT TEMP (K)	=	297.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	1
BUILDING HEIGHT (M)	=	.00
MIN HORIZ BLDG DIM (M)	=	.00
MAX HORIZ BLDG DIM (M)	=	.00

BUOY. FLUX = .03 M**4/S**3; MOM. FLUX = .11 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN DISCRETE DISTANCES ***
****

TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1402.	61.87	5	1.0	1.1	5000.0	18.9	123.5	63.7	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	61.87	1402.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

01-06-94
15:52:01

```
*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED  88300 ***

  g 220 Solids

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =    POINT
   EMISSION RATE (G/S)      =    .9500E-01
   STACK HEIGHT (M)         =    12.53
   STK INSIDE DIAM (M)      =     1.22
   STK EXIT VELOCITY (M/S)=       .56
   STK GAS EXIT TEMP (K)    =   297.00
   AMBIENT AIR TEMP (K)     =   293.00
   RECEPTOR HEIGHT (M)      =      .00
   IOPT (1=URB,2=RUR)       =     1
   BUILDING HEIGHT (M)      =      .00
   MIN HORIZ BLDG DIM (M) =        .00
   MAX HORIZ BLDG DIM (M) =        .00


BUOY. FLUX =     .03 M**4/S**3;  MOM. FLUX =     .11 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

    TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1402.	3.437	5	1.0	1.1	5000.0	18.9	123.5	63.7	NO

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************
```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.437	1402.	0.

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**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
   **************************************************
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MATERIAL SAFETY DATA SHEET

1. Name	POLYURETHANE
Part Number/Trade Name	MIL-C-85285B,36118,G/S,TYPE I
National Stock Number	8010013055551
CAGE Code	33461
Part Number Indicator	A
Manufacturer Name	DEFT, INC.
Street	17451 VON KARMAN AVE.
City	IRVINE
State	CA
Country	US
Zip Code	92714
Emergency Phone	800-424-9300
Information Phone	714-474-0400
Date MSDS Prepared/Revised	15JAN93
Specification Number	NR
Appearance/Odor	GRAY LIQUID WITH SOLVENT ODOR
Boiling Point	175-338 F
Specific Gravity	1.21
Evaporation Rate	1.33
Solubility in Water	INSOLUABLE
Percent Volatiles by Volume	53 VOL
Flash Point	23 DEG F (TCC)
Flash Point Method	TCC
Lower Explosive Limit	.90%
Upper Explosive Limit	11.40%
Extinguishing Media	FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, WATER SPRAY
Special Fire Fighting Procedures	FULL PROTECTIVE CLOTHING WITH SELF-CONTAINED BREATHING APP. COOL CLOSED CONTAINERS WITH WATER TO PREVENT PRESSURE BUILD-UP,AUTO IGNITION OR EXPLOSION
Unusual Fire/Explosion Hazards	OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD
Stability	YES
Stability Conditions to Avoid	HIGH TEMPERATURES,SPARKS,OR OPEN FLAME
Materials to Avoid	STRONG OXIDIZING AGENTS
Hazardous Decomposition Products	BY HIGH HEAT/TEMPERATURE:CARBON MONOXIDE,CARBON DIOXIDE,AND OXIDES OF NITROGEN
LD50 - LD50 Mixture	NR
Route of Entry: Skin	YES
Route of Entry: Ingestion	YES
Route of Entry: Inhalation	YES
Health Hazards - Acute & Chronic	A:VAPORS ARE IRRIT.TO EYES,NOSE&THROAT.INHAL.MAY CAUSE HEADACHESDIFF.BREATHING&LOSS OF CONSCIOUSNESS.C:PROLONGED CONTACT WILL CAUSE DRYING&CRACKING OF SKIN,DEFATTING ACTION.SKIN SENSITIZATION,ASTHMA OR

OTHER ALLERGIC RESPONSES MAY DEVELOP

Carcinogenity: NTP..... NR
Carcinogenity: IARC..... NR
Carcinogenity: OSHA..... NR
Symptoms of Overexposure..... INHAL:IRRIT.OF THE RESP.TRACT&ACUTE NERVOUS SYS.DEPRESSION,RESPECTIVALY:HEADACHE,DIZZINESS,STAGERING GAIT,CONFUSION,UNCONSC.,COMA;SKIN:IRRIT. SWELLING,REDNESS,RASH;EYES:IRRIT.TEARING ,REDNESS,SWELLING,STINGING;INGEST:ACUTE: IRRIT.&POSS.CORROSIVE ACTION IN TH
Medical Cond. Aggrevated by Exposure... ASTHMA AND ANY OTHER RESPIRATORY DISORDERS.SKIN ALLERGIES,ECZEMA,ANDDERMITITIS
Emergency/First Aid Procedures..... EYES: FLUSH WITH WATER 15 MIN. CALL PHY. SKIN: WASH WITH SOAP AND WATER. WASH CONTAM. CLOTHES. INHALE: GET TO FRESH AIR. ASTHMATIC SYPMTOMS MAY DEVELOP CALL PHY. INGEST: DO NOT INDUCE VOMITTING. GET MED. HELP
Steps if Material Released/Spilled..... EVACUATE ALL NON-ESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBANT AND NON-SPARKING TOOLS
Waste Disposal Method..... IN ACCORDANCE WITH LOCAL, STATE, AND FED. REGS.
Handling & Storage Precautions..... STORE IN OSHA 1910.106 APPROVED BUILDINGS. AWAY FROM HIGH TEMPS., FIRE, OPEN FLAMES, AND SPARK SOURCES. WELL VENTILATED AREA. IN TIGHTLY CLOSED C
Other Precautions..... KEEP CONTAINERS TIGHT AND UPRIGHT.EMPT CONTAINERS MUST BE HANDLED WITH CARE. PREVENT PROLONGED BREATHING OF VAPORS AND CONTACT WITH SKIN AND EYES
Respiratory Protection..... A RESP.THAT IS APPROVED FOR USE IN AN ORGANIC VAPOR ENVIRONMENT(AIR PURIFYING OR FRESH AIR SUPPLIED)IS NECESSARY.OBSERVEOSHA REGULATIONS FOR RESPIRATOR USE
Ventilation..... EXHAUST SUFFICIENT TO KEEP THE AIRBORNE CONC.OF SOLVENT VAPORS OR MISTS BELOW THEIR RESPECTIVE TLV'S MUST BE UTILIZED
Protective Gloves..... COTTON,NEOPRENE,RUBBER POLYETHYLENE
Eye Protection..... SIDE SHIELDS,CHEM.GOGGLES,FACE SHIELD
Other Protective Equipment..... LONG SLEEVE AND LONG LEG CLOTHING
Work Hygenic Practices..... WASH HANDS BEFORE EATING, SMOKING OR USING WASHROOM

Ingredient #..... 01
Ingredient Name..... BUTYL ACETATE
CAS Number..... 123-86-4
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.
OSHA PEL..... 150 PPM
ACGHIH TLV..... 150 PPM

Ingredient #..... 02

Ingredient Name..... ETHYL 3-ETHOXYPROPIONATE
CAS Number..... 763-69-9
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.
ACGHIH TLV..... NR

Ingredient #..... 03
Ingredient Name..... XYLENE
CAS Number..... 1330-20-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 04
Ingredient Name..... METHYL ISOBUTYL KETONE
CAS Number..... 108-10-1
NIOSH Number..... NR
Proprietary..... NO
Percent..... 25
OSHA PEL..... 50 PPM
ACGHIH TLV..... 50 PPM

Ingredient #..... 05
Ingredient Name..... METHYL ETHYL KETONE
CAS Number..... 78-93-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <5.
OSHA PEL..... 200 PPM
ACGHIH TLV..... 200 PPM

Ingredient #..... 06
Ingredient Name..... TOLUENE
CAS Number..... 108-88-3
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
ACGHIH TLV..... 100 PPM

Ingredient #..... 07
Ingredient Name..... MINERAL SPIRITS
CAS Number..... 64742-88-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <1.
ACGHIH TLV..... NR

Ingredient #..... 08
Ingredient Name..... DIBUTYLTIN DILAURATE
CAS Number..... 77-58-7
NIOSH Number..... NR
Proprietary..... NO
Percent..... <0.1
ACGHIH TLV..... .1 MG/M3

Ingredient #..... 09
Ingredient Name..... 2-4 PENTANEDIONE

CAS Number..... 123-54-6
NIOSH Number..... NR
Proprietary..... NO
ent..... <5.
IH TLV..... NR

Ingredient #..... 10
Ingredient Name..... ETHYL BENENE
CAS Number..... 100-41-4
Percent..... <1
OSHA PEL..... 100 PPM
ACGHIH TLV..... 100 PPM

Ingredient #..... 11
Ingredient Name..... ANTI-FLOAT AGENT
CAS Number..... 1317-65-3
Percent..... <1
OSHA PEL..... 10 MP/F3
ACGHIH TLV..... 10 MP/F3

Ingredient #..... 12
Proprietary..... YES
Percent..... <1

Ingredient #..... 13
Ingredient Name..... ANTI-MAR AGENT
Percent..... <1

redient #..... 14
edient Name..... FLOW AGENT
Number..... 26376-86-3
Percent..... <1

NOTICE: If you require a complete, unabbreviated MSDS, call Bioenvironmental Engineering.

Typical Input for Point be taken from Bldg 270 screen model run Input Submitted by OAFB.

09/30/94
13:34:56

```
 ***  SCREEN2 MODEL RUN  ***
 *** VERSION DATED 92245 ***

HAFBPB.MOD

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      25.3700
   STACK HEIGHT (M)         =      22.2500
   STK INSIDE DIAM (M)      =       1.5200
   STK EXIT VELOCITY (M/S)  =        .5600
   STK GAS EXIT TEMP (K)    =     297.0000
   AMBIENT AIR TEMP (K)     =     293.0000
   RECEPTOR HEIGHT (M)      =        .0000
   URBAN/RURAL OPTION       =        URBAN
   BUILDING HEIGHT (M)      =        .0000
   MIN HORIZ BLDG DIM (M)   =        .0000
   MAX HORIZ BLDG DIM (M)   =        .0000

BUOY. FLUX =      .043 M**4/S**3;  MOM. FLUX =      .179 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1128.	993.3	6	1.0	1.3	10000.0	26.99	103.03	55.05	NO
1200.	912.9	6	1.0	1.3	10000.0	26.99	108.53	57.42	NO
1300.	818.4	6	1.0	1.3	10000.0	26.99	116.01	60.59	NO
1400.	739.8	6	1.0	1.3	10000.0	26.99	123.32	63.65	NO
1500.	673.5	6	1.0	1.3	10000.0	26.99	130.46	66.60	NO
1600.	617.1	6	1.0	1.3	10000.0	26.99	137.45	69.45	NO
1700.	568.5	6	1.0	1.3	10000.0	26.99	144.29	72.22	NO
1800.	526.5	6	1.0	1.3	10000.0	26.99	150.99	74.90	NO
1900.	489.7	6	1.0	1.3	10000.0	26.99	157.56	77.50	NO
2000.	457.3	6	1.0	1.3	10000.0	26.99	163.99	80.03	NO
2100.	428.6	6	1.0	1.3	10000.0	26.99	170.31	82.50	NO
2200.	403.0	6	1.0	1.3	10000.0	26.99	176.51	84.91	NO
2300.	380.1	6	1.0	1.3	10000.0	26.99	182.60	87.25	NO
2400.	359.5	6	1.0	1.3	10000.0	26.99	188.59	89.55	NO
2500.	340.8	6	1.0	1.3	10000.0	26.99	194.47	91.79	NO
2600.	323.9	6	1.0	1.3	10000.0	26.99	200.25	93.99	NO
2700.	308.4	6	1.0	1.3	10000.0	26.99	205.95	96.15	NO
2800.	294.3	6	1.0	1.3	10000.0	26.99	211.55	98.26	NO
2900.	281.4	6	1.0	1.3	10000.0	26.99	217.06	100.33	NO
3000.	269.4	6	1.0	1.3	10000.0	26.99	222.50	102.36	NO
3500.	221.7	6	1.0	1.3	10000.0	26.99	248.53	112.02	NO
4000.	187.7	6	1.0	1.3	10000.0	26.99	272.89	120.97	NO
4500.	162.5	6	1.0	1.3	10000.0	26.99	295.83	129.34	NO
5000.	143.0	6	1.0	1.3	10000.0	26.99	317.55	137.22	NO

```
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND  1128. M:
  1128.    993.3          6      1.0     1.3 10000.0    26.99   103.03    55.05     NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION          MAX CONC     DIST TO    TERRAIN
  PROCEDURE          (UG/M**3)     MAX (M)     HT (M)
--------------      -----------    -------     -------
SIMPLE TERRAIN        993.3          1128.        0.

*****************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
*****************************************************
```

993.3 µg/m³ = 0.99 mg/m³

~~(lowest TLV (most toxic))~~

Lowest TLV (most toxic) compound emitted substantially from the Points used at HAIBIS Methyl Isobutyl Ketone (TLV = 2.05 mg/m³)
(MIK)

TLV/100 (non-carcinogen) = 2.05 mg/m³.

0.99 mg/m³ (from screen2 output) < 2.05 mg/m³ (TLV/100) for MIK

Worst case screen modeling performed.

Arjan:

These answers are in response to the questions you FAXed me 4/29/94.

1. PARTICULATE EMISSIONS FROM PAINTING OPERATIONS

- Assume paint weight 11 lbs per gallon

High VOC paint is assumed to be 5.5 lbs of VOC + 5.5 lbs of Solids

Low VOC paint is assumed to be 3.5 lb of VOC + 7.5 lbs of solids

- Assume 100% of VOCs are evaporated while 65% of solids are deposited on part and 35% is over spray. Of the over spray assume 90% is captured in booths filter system and 10% is emitted from stack.

CY 93 High VOC paint usage:	2,463.69 gal
lbs of solid per gallon :	x 5.50
	13,550.30 lbs
percent over spray :	x 0.35
	4,742.61 lbs
percent up stack :	x 0.10
lbs from high VOC paint :	474.26
CY 93 Low VOC paint usage :	15,235.13 gal
lbs of solid per gallon :	x 7.50
	114,263.48
percent over spray :	x 0.35
	39,992.22
percent up stack :	x 0.10
lbs from low VOC paint :	3,999.22

TSP from painting = 474.26 + 3,999.22 = 4,473.48 lbs

2. STACK DIAMETERS

AQUIS # 3728 = 42 "
AQUIS # 3560 = 36"

3. PAINT GUN EFFICIENCY

At present 80% of all industrial painting operations utilize High Volume Low Pressure (HVLP) paint guns. The potential to use HVLP at the remaining 20% will be assessed and implemented as practical over the next 24 months. HVLP paint equipment has a transfer efficiency of 65%, however the are not usable in application of high-gloss or textured finishes and on small spherical or tight radius parts.

4. PAINT GUN CLEANING

Approximately 60% of all paint booths have enclosed paint gun cleaners. At the present time commercial paint gun cleaners are only available for pressure pot sizes less than 3 gallons. For many pressure pots greater than 3 gallons paint gun cleaners have been fabricated from old covered cold cleaning units. These units are not as efficient as commercial units, however they are significantly better than uncontrolled gun cleaning.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

RECEIVED
JAN 12 1994
Air Quality

Mr Arjun Ram, Permitting Engineer
Division of Air Quality
1950 West North Temple
PO Box 144820
Salt Lake City, UT 84114-4820

5 Jan 1994

Re: Hill AFB Consolidated Permit Application for Paint Booths (Hill AFB ltr 20 July 93)

Dear Mr Ram

This letter is to submit a revised list of booths currently in operation at Hill AFB. This list is to be substituted for the one included with the original submittal. The attached list contains the following modifications to the original submittal.

1. Bldg 100J AQUIS #3286: This is an existing unpermitted booth that was omitted from the original list.

2. Bldg 238 AQUIS # 4407: This booth is currently operational under the terms of DAQE 0961-93.

3. Bldg 988 AQUIS #4408: The operation that once used this booth in Bldg 935 has just relocated to Bldg 988. The booth has been reassembled in Bldg 988, and is operational.

If you have any questions regarding this matter, please do not hesitate to contact me at 777-0359.

MICHAEL J. GRAZIANO
Air Quality Engineer

Atch
Revised Paint Booth
List

PAINT BOO INVENTORY

Bldg	AQUIS #	AO	Mnfgr	Model	CFM	Type	Stack Dia. in
5D	3314	BAQE-977-1	Binks	WE-10-8-T-LH	10,500	Water Fall	34"
5E	3332	Needs Permit	Binks		5,000*	Dry	18"
5N	3859	DAQE-167-92	DeVilbiss	DF-564	2,000	Dry	12"
12	3953	Grandfathered	Custom		10,500*	Dry	36"
48	3649	7/18/83	Custom		140,000	Dry	60"
48	3650	Needs Permit	JBI	WT-35-SB	15,000	Dry	48"
100J	3286	Needs Permit	Binks	29-784	7,700	Dry	36"
100J	3292	Needs Permit	DeVilbiss	DCC-5081	13,500	Water Fall	48"
205	4198	Inactive					
220	3116	DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"

Note, these 9 seperate waterfalls make up one booth that is segregated by curtains and can be configured in various ways to accn different aircraft. At present it is seperated by curtains into 3 bays.

4.2.4-352

PAINT BOOTH INVENTORY

220	3117	DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60*		
Note, these 6 pieces of equipment make up one booth that is segregated by curtains and can be configured in various ways to acc									
	different aircraft. At present it is sererated by curtains into 3 bays.								
220	3118	Grandfathered	DeVilbiss		3,600*	Water Fall	6 @ 36*		
220	3978	Grandfathered	DeVilbiss	2000	10,800*	Water Fall			
220	3073	Grandfathered	DeVilbiss	2000	10,800*	Water Fall			
238	4265	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4268	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4271	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4274	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4277	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4280	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36*		
238	4244	BAQE-525-88	Binks	WE-8-8-TLH	8,000*	Water Fall	24		
238	4407	DAQE-0961-93	DeVilbis	Custom	45,000	Water Fall	2@20*		
266	3838	Grandfathered	DeVilbiss		10,000*	Water Fall	48*		
266	3839	Grandfathered	DeVilbiss	J-K4214	10,000*	Water Fall	48*		
266	3840	Grandfathered	Custom		15,000*	Water Fall	48*		
270	3903	BAQE-454-89	JBI	C-130 Custom	470,000	Dry	6 @ 60*		
274	3402	BAQ-973-1	DeVilbiss	XNO-568	6,000*	Water Fall	42*		
505	3263	Needs Permit	Paasch	O962	7,500*	Water Fall	42*		

4.2.4-353

507	3050	BAQE-551-89	DeVilbiss		25,000	Water Fall	2 @ 42"		
507	3053	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3054	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3055	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3056	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3057	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
507	3058	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
507	3251	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
509	3150	BAQE-494-89	DeVilbiss	DCL-1689-125	16,000	Water Fall	34"		
509	3151	BAQE-494-89	DeVilbiss	DCL-1689-125	16,000	Water Fall	34"		
509	3153	BAQE-494-89	DeVilbiss	DF-6220	2,141	Dry	16"		
509	4058	BAQE-494-89	DeVilbiss	DF-6220	2,141	Dry	16"		
514	3102	BAQE-174-91	DeVilbiss	DF-L-676-125	5,250	Dry	24"		
534	3737	BAQE-359-88	Custom		12,000	Dry	16"		
590	3929	Needs Permit			6,000*	Water Fall	36"		
592	3931	Needs Permit	Protectaire		10,000*	Water Fall	36		
751	4161	BAQE-492-92	Binks		3,500	Dry	18"		
810	4217	Needs Permit	DeVilbiss		8,000*	Dry	42"		
847	3155	BAQE-030-88	Binks	NPB-24-20-T	193,600	Water Fall	8 @ 36"		
847	3247	Needs Permit	Binks	NPB-14-10-T-LH	15,000*	Water Fall	48"		
847	3248	Needs Permit	Binks		16,000*	Water Fall	48"		
988	4408	Needs Permits	DeVilbiss	XCL-58789	6000	Dry	42"		

4.2.4-354

PAINT BOOTH INVENTORY

1133	3734	BAQE-029-88	Custom		43,000	Dry	60"		
1251	3741	BAQE-101-89	Binks		27,000	Dry	42"		
1424	4256	BAQE-355-88	Binks	TWW-530-T-LO	25,200	Water Fall	48"		
1701	3915	BAQE-039-91	DeVilbiss	ASEY-914-34	18,000	Dry	34"		
1701	3919	BAQE-039-91	JBI	TSD-98-DT-S	190,000	Dry	6 @ 60"		
1913	3728	BAQE-026-88	DeVilbiss	XDF-6342	17,900	Dry			
1938	3560	BAQE-642-88	Binks		10,000*	Dry			
2026	3732	BAQE-977-1	Binks	PFA-12-10-T-LH	15,000	Dry	34"		

(*) Estimated CFM's

4.2.4-355

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

RECEIVED
JUL 29 1993
Air Quality

Mr. F. Burnell Cordner
Director, Division of Air Quality
1950 West North Temple
PO Box 144820
Salt Lake City, UT 84114-4820

20 July 1993

Re: Hill AFB Consolidated Air Permit, Paint Booths

Dear Mr Cordner

We propose to consolidate all paint booths, owned and operated by the Air Force, at Hill AFB, under a single Approval Order. Atch 1 is a current inventory of all paint booths located on base. Atch 2 is a list of permitted paint booths with their associated AO Number; and Atch 3 is a list of unpermitted, grandfathered, and proposed paint booths. At this time there are 37 permitted paint booths, 9 unpermitted booths, 7 grandfathered booths currently in operation at Hill AFB, as well as 4 proposed booths. It is the intent of this action to consolidate the permitting of all booths under a single approval order. Atch 4 is a list of proposed conditions for the single approval order.

We further propose that the maximum allowable VOC emissions from painting operations at Hill AFB shall not exceed 402,420 lbs/yr (201.2 tons/yr). It is anticipated that this amount will cover all existing and potential future painting workloads at the base. This amount was determined by summing the total quantity of VOC emissions currently permitted and adding to it the amount of a recently submitted Notice of Intent (NOI). This proposal, currently under review by the Department of Air Quality, Julie Rose, will consolidate BAQE 454-89 and DAQE 167-92 (Bldgs 5N, 220, and 270) under a single consolidated Approval Order.

We will centrally manage and monitor the VOC emissions from the numerous paint booths on base. The Environmental Management Directorate will allocate VOC emissions to each of the paint booths located on base. Allocation of these emissions will be based upon workloads and at the discretion of the Director of Environmental Management. Logs of paint and thinner usage and VOC emissions will be maintained at the individual booths. These monthly paint logs will be submitted to Environmental Management which will be responsible for calculating the VOC emissions from all paint booths for the past 12-month period. The total emissions from all paint booths located on base shall not exceed 201.2 tons during the past 12-month period.

Emissions from individual booths will be determined in the following manner:

VOC = (Percent Volatile by Weight/100) X (Density lb/gal) X (Gallons Consumed) / (2,000 lb/ton)

VOC emissions will be controlled by continued substitutions of high VOC paint to compliant low VOC paint wherever possible and the continued use of high efficiency paint transfer equipment. Typically, paint booth exhaust streams contain a large mass of air with a very low concentration of VOC emissions, typically 30-40 PPMV. There are currently several technologies available to control VOC emissions from surface coating operations. These include carbon adsorption, thermal incineration, and regenerative thermal incineration. However, these technologies have proven to be highly energy intensive. Over the past three years, Hill AFB has converted 97 percent of its surface coating applications from High to Low VOC paints. Additionally, the use of High Volume Low Pressure (HVLP) spray guns has significantly improved transfer efficiency. Both of these methods have resulted in significant reductions of VOC emissions. In addition to the above, the Air Force and the paint industry are working together to find low VOC substitutes for those applications that still require high VOC paint. Therefore, it is proposed that VOC emissions be controlled by continued substitution and use of high efficiency transfer equipment.

It is further proposed that modification of existing paint booths or addition of new booths be accomplished through amendments of the Consolidated Approval Order. It is the intent of this effort to simplify the issuing and management of permits. Since the total VOC emissions will not increase from the approved 201.2 tons/yr, any action involving paint booths at Hill AFB could reference the single Approval Order with a new revision number.

Your assistance in this matter would be greatly appreciated. If you have any questions regarding this matter, please do not hesitate to contact the Hill AFB project manager, Michael Graziano, at 777-0359.

Sincerely

James R. VanOrman

JAMES R. VAN ORMAN
Director of Environmental Management

4 Atch
1. Paint Booth Inventory
2. Permitted Paint Booths
3. Unpermitted Grandfathered, Proposed Booths
4. Proposed AO Conditions

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY PERMIT

CONSOLIDATED AIR PERMIT FOR ALL PAINT BOOTHS AT HILL AIR FORCE BASE, UTAH

This approval order is being issued to combine AOs for numerous existing paint spray booths and to approve the operations of several currently un-permitted paint booths. A list of those paint spray booths covered under this AO is attached.

PAINT SPRAY BOOTH PERMIT CONDITIONS

1. Emissions of VOC from operations within the identified paint spray booths shall not exceed a combined total of 201.2 tons per 12- month period without prior approval in accordance with R307-1-3.1, UAC. Compliance with the limitation shall be determined on a rolling 12 month total. Based on the first day of each month a new 12 month total shall be calculated using the previous 12 months. The emissions of VOC shall be determined by maintaining a record of paints and thinners used at each individual paint booth. The record shall include the following data for each item used:

a. Name of paint or thinner.
b. Weight in pounds per gallon. VOC lb/gal in lieu of b) & c)
c. Percent VOC by weight
d. Amount used on a daily basis.

Records of consumption shall be kept for all periods when the booth is in operation . Records of consumption shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

VOC emissions shall be determined in the following manner:

VOC = (% Volatile by weight / 100) X (Density lb/gal) X (Gallons Consumed) / 2,000 lb/ton)

change order

The VOC emissions in pounds for each surface coating item shall be calculated, and then the total of all items shall be summed, such that the cumulative total shall not exceed the 201.2 tons per 12 month period as specified.

2. Visible emissions from any point or fugitive emissions source associated with thew emission points listed in this AO shall not exceed 10% opacity. Opacity

Attn 4-1

observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

3. All paint spray booths will be equipped with a paint capture system, ie. water wall or filters, to control particulate emissions . All air exiting the booth shall pass through this control system before being vented into the atmosphere. Equivalency shall be determined by the Executive Secretary.

4. A copy of this AO shall be posted on site and shall be available to the employees who operate the air emission producing equipment. All employees who operate the air emission producing equipment described in this AO, shall receive instruction as to their responsibilities in operating the equipment in compliance with all relevant conditions.

5. All paint spray booths authorized by this Approval Order shall be adequately and properly maintained.

6.. The owner/operator shall comply with R307-1-3.5 , UAC. This rule addresses emission inventory reporting requirements.

7. The owner/operator shall comply with R307-1-4.7, UAC. This rule addresses unavoidable breakdown reporting requirements. The owner/operator shall calculate/estimate the excess emissions whenever a breakdown occurs. The total of excess emissions shall be reported to the Executive Secretary as directed for each calender year.

Any future modifications to the equipment approved by this order must also be approved in accordance with R307-1-3.1.1, UAC.

This AO represents a consolidated permit for the paint spray booth source category at Hill AFB. Future modifications to booths identified under this AO; or additions, deletions of paint spray booths, or changes in paint booth operations will be made by amending this Approval Order.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the Utah Air Conservation Rules.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

14 Feb 1994

OO-ALC /EME
7274 Wardliegh Rd.
Hill AFB, Ut 84056-5127

Mr Arjun Ram, Permitting Engineer
Division of Air Quality
1950 West North Temple
PO Box 144820
Salt Lake City, UT 84114-4820

Re: Hill AFB Consolidated Permit Application for Paint Booths (Hill AFB ltrs 20 July 93 and 5 Jan 94; and mtg 7 Jan 94)

Dear Mr. Ram

This letter is to submit the paint usage data you requested during our 7 Jan 94 meeting. Specifically, you requested a list of those paints that were used in excess of 1% of the total paint usage at Hill AFB. The attached list gives the National Stock Number (NSN), Description, and quantity in ounces. Please note that even though there are 13 separate paints identified, nine of them are polyurethane. Additionally, I suggest the following reporting requirement be incorporated into the proposed consolidated paint booth permit;

> "During January of each year the base shall report the total quantity of paints used during the just completed calendar year and identify those that were used in excess of 1% of the total. Additionally the base shall provide to the DAQ an MSDS for each paint that appears on the 1% or greater list."

If you have any questions regarding this matter, please do not hesitate to contact Mike Graziano at 777-0359.

LYNN S. HILL
Chief, Env Compliance Div.

2 Attachments
1. 1% or Greater List
2. MSDS's for 13 Paints

4.2.4-360

Total Paint consumption CY 93 is 3,097,341.33 ounces which is 24,198 gallons.

Report those paints which exceed 1% of the total, ie. 30,973 ounces

For this report identify all paints (Search for Common Stock Numbers) used in excess of 30,000 ounces.

NSN		Descrip	Ounces
1. 8010012137898	8557	Koroflex Primer Yellow	320,294.40
2. 8010012659143	33461 A	Polyurethane White	21,639.35
8010012659143	33461 B		41,137.06
3. 8010012659151	33461 A	Polyurethane Paint	56,197.65
8010012659151	33461 B		6,648.01
4. 8010012853554	33461 A	Polyurethane Paint	42,560.97
8010012853554	33461 B		32,600.79
5. 8010013055551	33461 A	Polyurethane Paint	766,690.32
8010013055551	33461 B		188,603.29
6. 8010013121169	85570 A	Epoxy Paint	188,804.18
8010013121169	85570 B		26,790.17
7. 8010013226622	33461 A	Polyurethane Paint	26,751.01
8010013226622	33461 B		5,456.37
8. 8010013226623	33461 A	Polyurethane Paint	34,560.00
8010013226623	33461 B		28,416.00
9. 8010013443218	33461 A	Polyurethane Paint	55,554.00
8010013443218	33461 B		9,904.00
10. 8010013456535	33461 A	Polyurethane Paint	153,496.00
8010013456535	33461 B		92,688.00
11. 8010L00006F	85570 A	Waterborne Primer	44,728.32
12. 8010P400017F	85570 A	Fast Dry Paint	176,576.00
13. 8010P887670F	33461 A	Polyurethane	22,808.32
8010P887670F	33461 B		6,949.77
		TOTAL	2,349,853.98

THIS TOAL REPRESENTS APPROXIMATELY 75% OF ALL PAINT USED AT HILL AFB

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
137000294127935987A	FUSEE STARTER,FIRE	-				OZF
1730PGAK2200 88952F		-			128	OZF
292000888059159501A	COIL,IGNITION	-				OZF
34390017885750ACE2A	ELECTRODE, WELDING	-				OZF
343900255458087618A	FLUX, WELDING	-			384	OZF
3439P55 39918B		-				OZF
561000141784270228A	WALKWAY COMPOUND,NONSLIP	-				OZF
561000141784272988A	WALKWAY COMPOUND LIGHT GRAY	-				OZF
561000516003883574B	FLIGHT DECK COMPOUND,NONSLIP	-				OZF
561000641042770228A	WALKWAY COMPOUND	-				OZF
5610PHEYDIK111Z185A		-				OZF
564000062787380703A	SAUEREISEN LOW EXPANSIONCEMENT, NO. 29	-				OZF
596000116996920948A	ELECTRON TUBE	-			1280	
596000624471831435A	ELECTRON TUBE	-				OZF
596000836627394988A	ELECTRON TUBE	-				OZF
597001072973821109A	INSULATION CMPD	-			2	OZF
597001171641021109A	INSULATING COMPOUND, ELECTRICAL	-				OZF
61350029969182A917A	BATTERY(1) NONRECHARGEALBE	-				OZF
652000764226233339B	PERMLASTIC CATALYST, DENTAL IMPRESSION MTL	-				OZF
652001211960108675A	CEMENT, IONOMER, GLASS	-				OZF
652501098579919139B		-				OZF
663001315373415481A	DETERGENT SOLN, BLOOD CELL COUNTER ANALYZER	-				OZF
675000153891519139A	DEVELOPER,PHOTOGRAPHIC	-				OZF
675000619994619139B	FIXING BATH,PHOTOGRAPHIC	-			33	
675000945652919139B	DEVELOPER,PHOTOGRAPHIC	-				OZF
675000965495119139B	DEVELOPER, REPLENISHER	-			64	OZF
675001020213719139A	BLEACH REPLENISHER,PHOTOGRAPHIC	-			128	
675001042087219139P	CHEMICAL KIT,PHOTOGRAPHICCOLOR PROCESSING	-				OZF
681000122396635W216A		-			128	OZF
681000174658 15A188A	SODIUM HYDROXIDE,TECHNICAL	-				OZN
681000184479686511A	ACETONE, TECHNICAL	-				OZF
681000201090 61F942A	SPECIALLY DENATURED ALCOHOL	-			544	OZF
681000201090 63T076A	ALCOHOL,DENATURED	-				OZF
681000201090661305A	ALCOHOL,DENATURED	-			12	OZF
681000201090682925A	ALCOHOL,DENATURED	-			196	OZF
68100020109068F	ALCOHOL,DENATURED	-				OZF
68100020109078	ALCOHOL,DENATURED	-				OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
681000201090782925A	ALCOHOL,DENATURED	-			6400	OZF
681000201090786511A	ALCOHOL,94.9% BY VOLUME,DENATURED	-				OZF
68100020567860A9L8A		-			2668	OZF
68100020567864N760A	DENATURED ETHYL ALCOHOL	-			64	OZF
681000205678678918A	PROPRIETARY SOLVENT III-1,190 (TYPE 4)	-			256	
681000222964362910A	AMMONIUM HYDROXIDE,TECHNICAL	-			2048	OZF
68100022327394N760A	ACETONE	-				OZF
681000227041032939A	ISOPROPYL ALCOHOL,ACS	-			12	OZF
681000227041061305A	ISOPROPYL ALCOHOL, ACS	-				OZF
681000236567082925A	NITRIC ACID, TECHNICAL	-				OZF
68100023729541L164A	NITRIC ACID,ACS	1987/09/21 -	87-244	YES		
68100024993543A536A	N/R	-			256	OZF
681000264661890038A	SODIUM BICARBONATE,TECHNICAL	-			2560	
681000264898360777A	METHYL ETHYL KETONE, TECHNICAL	-			3	OZF
681000270998860777A	TALC, TECH	-				OZF
68100028127624N760A	METHYL ETHYL KETONE, TECH	-			18560	OZF
681000281276297984A	METHYL ETHYL KETONE, TECHNICAL	-				OZF
681000281276329700A	METHYL ETHYL KETONE, TECHNICAL	-				OZF
68100028127634N760A	METHYL ETHYL KETONE, TECHNICAL	-			21120	OZF
681000281276382925A	METHYL ETHYL KETONE,TECHNICAL	-			288512	OZF
681000281276394684A	METHYL ETHYL KETONE,TECHNICAL	-				OZF
6810002812763HAFBBA		-			35200	OZF
68100028127853D253A	METHYL ETHYL KETONE	-				OZF
68100028127855W216A	METHYL ETHYL KETONE, TECHNICAL	-				OZF
68100029000465A188A	TOLUENE,TECHNICAL	-				OZF
681000290004677416A	TOLUENE,TECHNICAL	-			14080	OZF
681000290004678628A	TOLUENE, TECHNICAL	-			70528	OZF
68100029055741U692A	SODIUM BICARBONATE,BAKINGSODA, SX0325	-			128	OZF
681000356493620385A	WATER, DISTILLED/DEIONIZED	-				OZF
68100035649366A021A	DISTILLED WATER,TECHNICAL	-				OZF
681000476561282925A	1,1,1-TRICLOROETHANE, TECHNICAL	-			1280	OZF
681000476561297984A	1,1,1 TRICHLOROETHANE,INHIBITED	-				OZF
68100047656131B637A	1,1,1 TRICHLOROETHANE, TECHNICAL	-				OZF
68100047656135T283A		-				OZF
681000551148781348A	1,1,1 TRICHLOROETHANE	-				OZF
681000586664761637A	ISOPROPYL ALCOHOL,ACS	-				OZF
8100059736085W216A	METHANOL,TECHNICAL	-				OZF

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ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
681000598731682925A	SODIUM HYPOCHLORITE SOLUTION	-				OZF
68100059873169H634A	SODIUM HYPOCHLORITE SOLUTION	-			2188	OZF
68100085561604N760A	ISOPROPYL ALCOHOL	-				OZF
681000855616082925A	ISOPROPYL ALCOHOL,TECHNICAL	-				OZF
68102CHLOROE 8Y898A		-				OZF
68102CHLOROI 8Y898A		-				OZF
68104BROMOPH 8Y898A		-				OZF
6810BIS2CHLO 8Y898A		-				OZF
6810ISOPHORON8Y898A		-			1	OZF
6810P0000006060928A		-			1152	OZF
6810P00000066069K0A		-			704	OZF
6810P208 7R331A	DEFOAMER	-			32	OZF
6810P886325F 05083A	POTASSIUM PERMANGANATE SOLUTION	-				OZF
6810PB81174 21667A		-			16	OZF
6810PC105564146575A		-				OZF
6810POGD0156 84111A	SULFURIC ACID	-				OZF
683000144995218873A	SEE SUPPLEMENTAL DATA	-				OZF
683000424958021267A	REFILL, DICHLORODIFLUOROMETHANE	-				OZF
68300093598961L164A	MONOCHLORIDIFLUOROMETHANE,TECHNICAL	-				OZF
68300093598965P414A	MONOCHLORODIFLUOROMETHANE, TECHNICAL	-			512	OZF
6830P7800001 58746A		-				OZF
684000570529940912A	SANITIZER-DETERGENT,GENERAL PURPOSE	-				OZF
684000721605553984A	DEODORANT,GENERAL PURPOSE	-				OZF
684000721605581348A	DEODORANT,GENERAL PURPOSE	-				OZF
68400129851413J700A	DISINFECTANT, GENERAL PURPOSE	-				OZF
685000003529554700A	CLEANING&LUBRICATING COMPOUND,ELECTRICAL CON	-			448	OZF
685000224665782925A	CLEANING COMPOUND,RIFLE BORE	-				OZF
68500026465747K183A	DESICCANT, ACTIVATED	-				OZN
6850002813042D9808A	CARBON REMOVING COMPOUND	-				OZF
685000300900821361A	CORROSION REMOVING COMPOUND	-			77440	OZF
68500030090083D863A	CORROSION REMOVING COMPOUND	-				OZF
685000300900860672A	CORROSION REMOVING COMPOUND	-				OZF
685000300900871361A	CLEANING COMPOUND, ALUMINUM SURFACE	-			35200	OZF
685000319083486511A	CLEANING COMPOUND SOLVENTTRICHLOROTRIFLORETH	-			128	
685000392975160777A	CLEANING COMPOUND,OPTICAL LENS	-			4	OZF
685000457152157[illegible]	TONER, DIRECT ELECTROSTATIC PROCESS	-			8.818	
68500053809294	CLEANING COMPOUND SOLVENT	-				OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
685000702429701139A	SILICONE COMPOUND	-			16	OZF
685000702429701139B	SILICONE COMPOUND	-			320	OZF
685000754267223894A	ANTIFOGGING COMPOUND	-				OZF
685000823786198727A	FUEL,ENGINE PRIMER	-			32	OZF
685000926227518375A	CLEANING COMPOUND,WINDSHIELD	-			16	OZF
685001140568217405C	TONER CONCENTRATE AND DISPERSANT KIT	-				OZF
685001164573826921A	FUSER LUBRICANT	-				OZF
685001181717882925A		-				OZF
685001239760989431A	COPY MACHINE TONER	-			128	
685001260805586938A	SYN-LEC ELECTROWASH	-				OZF
6850012648679HAFBBA		-			128	OZF
685001266661911924A	#10 ACTIVATING SOLUTION	-				OZF
6850L003580F 55208A		-			49408	OZF
6850P00745F 78774A		-				OZF
6850P886378F 21361A	CLEANING COMPOUND	-				OZF
6850P901380F 4W800A	ENZYME CLEANER/DEGREASER	-			4480	OZF
6850PARGL02 20772A		-				OZF
6850PBBM-47 21361A	CLEANING COMPOUND	-				OZF
6850PLA 5K793A	DEOXIDIZING COMPOUND	-				OZF
6850PM5200 26023A	CLEANING COMPOUND	-			1152	OZF
7510PER111 76708A	EPOXY RESIN INK	-				OZF
79300092652801A862A	P-D-1747,CLEANER, ALL PURPOSE	-			129	OZF
7930P1879G 21361A		-			98560	OZF
7930PDS104 30256A		-			240	OZF
801000001335 16F266A	SEMI-GLOSS ENAMEL BLUE	-				OZF
801000045347833148A	PAINT	-				OZF
801000079376433451A	ENAMEL	-				OZF
801000082243951686B	EPOXY POLYAMIDE COATING	1987/05/07 - 1989/03/28		YES	128	OZF
801000082243981349A	COATING	-			128	OZF
801000082245000297A	EPOXY POLYAMIDE COATING	-	87-298			OZF
801000082245009869A	EPOXY PRIMER	1987/12/28 -	89-012	YES	256	
801000082245060003A	PRIMER	-	89-012		256	OZF
801000082245060035A	PRIMER POLY	-	89-012		256	OZF
801000082245060035B	PRIMER	-	89-012		64	OZF
801000082245061196A	EPOXY POLYAMIDE PRIMER	-	89-012		256	OZF
801000082245061196B	EPOXY POLYAMIDE PRIMER	-	89-012		512	OZF
801000082245080592A	EPOXY PRIMER SPRAY PAINT	-	87-298			OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
8010000822450HL007A		-	87-298			OZF
801000087010792216A	ENAMEL ALKYD	-				OZF
80100014129580FTT5A	AEROSOL GRAY LACQUER	-				OZF
801000159451933333A	POSTAL RED 11136	-			448	OZF
801000165611161196A	LACQUER	-				OZF
801000165614061196A	LACQUER	-			128	
801000165862833201A	DARK OAK STAIN, TT-S-711,FORMULA 51	-				OZF
801000166166709869A	799-716,TT-L-54C TY1, WHITE 17875	-				OZF
801000166314709869A	BLACK 37058	-				OZF
801000166314761196A	LACQUER	-				OZF
801000166315109869A	RED 31136	-				OZF
801000166315209869A	WHITE 37875	-			160	OZF
801000166315261196A	LACQUER	-				OZF
801000180634333201A	VARNISH, OIL	-				OZF
801000181819533461A	POLYURETHANE COATING	1987/09/21 -	87-242	YES		
801000181825433461A	POLYURETHANE COATING	- 1993/01/01	87-151			OZF
801000181825433461B	POLYURETHANE COATING	- 1993/01/01	87-151			OZF
801000181825533461A	POLYURETHANE COATING	1987/05/07 - 1993/01/01	89-012	YES		OZF
801000181827733461A	POLYURETHANE COATING	1987/12/28 - 1993/01/01	87-298	YES		OZF
801000181827733461B	POLYURETHANE COATING	- 1993/01/01	87-298			OZF
801000181828133461A	POLYURETHANE COATING	- 1993/01/01	87-151			OZF
801000181828133461B	POLYURETHANE COATING	- 1993/01/01	87-151			OZF
801000181828233461B	POLYURETHANE COATING	1987/05/07 - 1989/03/28	87-151	YES		OZF
801000181828433461A	POLYURETHANE ENAMEL	- 1993/01/01				OZF
801000181828498502A	ENAMEL ALIPHATIC POLYURETHANE	1987/05/07 - 1993/01/01	87-152	YES		
801000181828533461A	COATING, TWO-PART KIT(ONE QUART EACH)	1987/05/07 -	87-151	YES		OZF
801000181828533461B	POLYURETHANE COATING	- 1993/01/01	87-151			OZF
801000181828733461A	POLYURETHANE COATING	1987/05/07 - 1993/01/01	87-152	YES		OZF
801000181829233461A	POLYURETHANE COATING	- 1993/01/01	87-150			OZF
801000181829233461B	POLYURETHANE COATING	- 1993/01/01	87-150			OZF
801000181829233461C	POLYURETHANE COATING	1987/05/07 - 1993/01/01	87-150	YES		
801000181829633461A	POLYURETHANE COATING	1987/09/21 - 1993/01/01	89-012	YES		OZF
801000181830233461A	POLYURETHANE COATING	1987/05/07 - 1993/01/01	87-152	YES		
801000181830233461B	POLYURETHANE COATING	- 1993/01/01				OZF
801000242631509869A	WHITE 17875	-				OZF
801000242631512[illegible]	LACQUER,CELLOUSE	-				OZF
801000242631516	LACQUER	-				OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
801000242631809869A	BLUE 15044	-				OZF
801000242631861196A	LACQUER	-				OZF
801000244579180244A	PAINT,OIL	-			128	
801000248283861196A	LACQUER	-				OZF
801000248283909869A	YELLOW 13538	-				OZF
801000251650309869A	RED 11136	-				OZF
801000251650312904A	LACQUET,CELLULOSENITRATE,GLOSS	-				OZF
801000251650361196A	LACQUER	-				OZF
801000251650561196A	LACQUER C/N GLOSS	-			256	
801000257537709869A	WHITE 17875	-				OZF
801000257537761196A	LACQUER	-				OZF
801000257537809869A	POLYURETHANE COATING	-				OZF
801000257537861196A	LACQUER	-				OZF
801000262917123577A	INSTANT WOOD FILLER	-				OZF
801000263319233333A	URAFILM GLOSS BLACK	-			128	OZF
801000263319291794A	WRINKLE FINISH COATING	-				OZF
801000280175133461A	THINNER,ALIPHATIC,POLYURETHANE COATING	-			35200	OZF
80100028017514N760A	AIRCRAFT COATING THINNER	-			98688	OZF
801000281207433429A	TT-S-171B STAIN OIL, INTERIOR,LT WALNUT	-				OZF
801000286773709869A	PAINT	-			288	OZF
801000286775833832A	TT-E-489F YELLOW,13538, ENAMEL,ALKYD,GLOSS	-			32	OZF
801000297054609869A	BLACK,37038	-			64	OZF
801000297054660189A	LUSTERLESS ENAMEL BLACK	-			192	OZF
801000297054661196A	ENAMEL ALKYD LUSTRELESS	-				OZF
801000297054761196A	ENAMEL ALKYD LUSTRELESS	-			128	OZF
801000297054961196A	ENAMEL ALKYD LUSTRELESS	-			32	OZF
801000297057061196A	ENAMEL ALKYD LUSTRELESS	-			640	OZF
801000297058461196A	ENAMEL ALKYD SG	-				OZF
801000297212061196A	ENAMEL-LUSTERLESS QD	-				OZF
01000298230209869A	ENAMEL, ALKYD, GLOSS	-				OZF
01000298230261196A	ALKYD ENAMEL-GLOSS	-			128	OZF
01000330770462758B		-			128	OZF
801000330770485570A	POLYURETHANE COATING GRAY	-			448	OZF
801000330770485570B	ISOCYANATE ACTIVATOR SOLUTION	-	89-012		352	
80100040209533B052C	ANTENNA PRIMER CATALYST	1986/07/16 - 1989/07/16	86-098	YES		
801000402095355849B	COATING KIT, EPOXY	-			3968	OZF
801000410845833333A	F-151, HAZE GRAY, MIL-P-24441/2, 65165 A	-			1280	

LIST OF ALL MATERIALS IN A ZONE

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Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
801000459175633333A	RAIN EROSION KIT	1987/09/21 -	87-242	YES		OZF
801000459175660922A	POLYURETHANE COATING BLACK	-	89-012		288	
801000482565133461A	POLYURETHANE COATING	- 1993/01/01	89-012			OZF
801000482565133461B	POLYURETHANE COATING	- 1993/01/01	89-012			OZF
801000482565333461A	POLYURETHANE COATING	- 1993/01/01				OZF
801000482565398502A	COATING URETHANE,ALIPHATIC ISOCYANATE	1987/05/07 - 1993/01/01	87-152	YES		
801000482566233461A	COATING, TWO-PART KIT (ONE QUART EACH)	- 1993/01/01	87-148			OZF
801000482566281349B	POLYURETHANE COATING	1987/05/07 -	87-149	YES		OZF
801000482566333461A	POLYURETHANE ENAMEL, 2-PART SYSTEM, COMP A	- 1993/01/01				OZF
801000482566633461A	COATING, TWO-PART KIT(ONE QUART EACH)	1987/05/07 - 1993/01/01	87-152	YES		OZF
801000482567033461A	POLYURETHANE ENAMEL	1987/05/07 - 1993/01/01	87-151	YES		OZF
801000482567133461A	POLYURETHANE ENAMEL	1987/05/07 - 1993/01/01	87-151	YES		OZF
801000482567133461B	POLYURETHANE COATING BLACK	- 1993/01/01				OZF
801000482567433461A	POLYURETHANE COATING	1987/05/07 -	87-149	YES		
801000482567433461B	POLYURETHANE COATING	1987/12/28 - 1993/01/01	87-298	YES		
801000515156809869A	GREY 36231	-				OZF
801000515221177672A	PRIMER COATING	-				OZF
8010005270216HL002B		-				OZF
801000527204533832A	TT-E-489FYELLOW, 13538, ENAMEL,ALKYD,GLOSS	-				OZF
801000527204561196A	ALKYD ENAMEL-GLOSS	-				OZF
801000527204584239A	TT-E-489F, YELLOW #13538(PAINT)	-				OZF
801000527204592216A	ENAMEL ALKYD	-				OZF
801000527205309869A	BLACK 17038,ENAMEL ALKYDGLOSS 742-702	-			96	OZF
801000527205333832A	ALKYD ENAMEL BLACK	-				OZF
801000527205361196A	ENAMEL	-				OZF
801000527249312904A	LACQUER	-			256	OZF
801000527319809869A	RED #11136-1	-			256	OZF
801000527319833832A	ENAMEL, ALKYD, GLOSS	-				OZF
801000527319861196A	ENAMEL	-			128	OZF
801000527319892216A	ENAMEL ALKYD GLOSS	-				OZF
801000527319933461A	ENAMEL, ALKYD, GLOSS, TT-E-489G	-			320	OZF
801000527319992216A	ENAMEL ALKYD GLOSS	-				OZF
801000530532609869A	WHITE #37875	-				OZF
801000530556561196A	ENAMEL ALKYD SG	-				OZF
801000530837061945A	SEALER, FLOOR	-				OZF
801000582531834	X-3917 ZINC CHROMATE PRIMER					OZF
801000582531871	PRIMER COATING					OZF

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01000582538251N005A	AEROSOL PAINT	-			160	OZF
01000582538281348A	AEROSOL PAINT	-				OZF
801000584308133832A	ENAMEL,ALKYD, GLOSS	-				OZF
801000584314881348A	PAINT, AEROSOL	-				OZF
801000598572933148A	PAINT	-			96	OZF
01000598573759142A	LATEX PAINT	-				OZF
01000598592992216A	ENAMEL,ALKYD,GLOSS	-				OZF
801000598593380592A	LACQUER.CELLULOSENITRATE,GLOSS FOR AIRCRAFUS	-				OZF
01000598915633333A	TT-T-390, 1A BLACK, LAMPBLACK	-			32	OZF
801000616914333451A	POLYURETHANE PAINT	-				OZF
301000616918156921A	SPRAY PAINT	-				OZF
3010006410426HAFBAA		-			512	OZF
801000663267361196A	LACQUER	-				OZF
301000664191361196A	LACQUER	-				OZF
301000664191412904A	TT-L-20A,LACQUER CAMOUFLAGE,GRAY #36231	-				OZF
801000664336509869A	GRAY 36231,LUSTERLESS ALKYD ENAMEL 741-612	-				OZF
801000664336561196A	ENAMEL ALKYD LUSTRELESS	-			256	OZF
101000664476100297A	ALKYD ENAMEL WHITE 17875	-			3840	OZF
01000664476133832A	ENAMEL	-				OZF
301000664476134346A	ALKYD ENAMEL	-				OZF
801000664476132268A	ENAMEL PAINT WHITE 17875	-			896	OZF
301000664476160189A	ENAMEL,ALKYD,GLOSS,COMP L	-				OZF
01000664476161196A	ALKYD ENAMEL-GLOSS	-				OZF
01000664765109869A	BLACK #37038	-			384	OZF
01000680020309869A	GRAY # 16473	-			256	OZF
01000680020361196A	ENAMEL	-			384	OZF
801000721974659581B	LACQUER	-				OZF
3010007219748HL001A		-				
3010007219754HL001A		-				OZF
301000721988292216A	LACQUER,SPRAYING,ACID RESISTANT	-				OZF
01000815269234346B	X-5767,ALUM HEAT RESIST PAINT,1200F,COMP L	-			128	OZF
801000823801200297A	INTERIOR ALKYD ENAMEL	-				OZF
801000851552433451A	27142	-				OZF
3010008835329HL001A		-				OZF
01000900293733148A	TRAFFIC MARKING PAINT	-			256	
01000900293833200A	TRAFFIC PAINT	-				OZF
01000900293833832A	TT-P-115E,TV2,PAINT, TRAFFIC,WHITE	-				OZF

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801000900364833200A	TRAFFIC PAINT	-				OZF
801000926213316522A	FILLER,DENT	-			48	OZF
801000926917481348A	POLYURETHANE COATING CLEAR	1987/09/21 -	87-242	YES		
801000935399461945A	PAINT, ENAMEL ALKYD SG	-			32	
801000935706161196A	LACQUER	-			320	OZF
801000935707209869A	LACQUER,ACRYLIC	-			384	
801000935707309869A	LACQUER,ACRYLIC	-				OZF
801000935707661196A	LACQUER	-			128	OZF
801000936836972225A	LACQUER	-				OZF
801000943712881348A	PAINT REMOVER	-			128	OZF
801000958814859986A	ORANGE FLUORESCENT, 38903	-				OZF
801000965239091794A	LACQUER	-			384	
801001017248033461A	POLYURETHANE PAINT	-				OZF
801001017248033461B	ALIPHATIC ISOCYANATE CATA LYST	-				OZF
801001040105 93D863A	MIL-R-83936B,AM1,REMOVER,PAINT,TANK TYPE	-				OZF
801001053264606341A	COATING, EPOXY-POLYAMIDE	1987/09/21 -	87-242	YES		OZF
801001053264606341B	COATING, EPOXY-POLYAMIDE	-				OZF
801001053264660003B	EPOXY PAINT CATALYST	-				OZF
801001060646191794A	ENAMEL	-				OZF
801001069569161102A	REMOVER,PAINT	-				OZF
801001084696333461A	POLYURETHANE COATING G/S GRAY	1987/12/28 -	87-298	YES		OZF
801001100909433461A	POLYURETHANE PAINT	- 1993/01/01	89-012			OZF
801001100909433461B	POLYURETHANE PAINT CATALY ST	- 1993/01/01	89-012			OZF
801001104652133461A	POLYURETHANE GRAY	1986/04/04 - 1989/04/04	89-012	YES		OZF
801001104652133461B	ALIPHATIC ISOCYANATE CATALYST	- 1993/01/01	89-012			OZF
8010011046524HAFBBA		-			128	OZF
8010011046524HAFBBB		-			32	OZF
801001104653533461A	POLYURETHANE ENAMEL - COMPONENT I	1987/12/28 -	87-298	YES		OZF
801001104653533461B	POLYURETHANE ENAMEL - COMPONENT II	-				OZF
801001124763161196A	ENAMEL	-			32	
8010011261427HAFBBA		-			1312	OZF
8010011271960HAFBBA		-			29088	OZF
801001200263 70BBA1A	THINNER	-				OZF
801001213789885570A	POLYURETHANE PRIMER	-	89-012		189120	
801001213789896595A	EPOXY PRIMER	-	89-012		29056	OZF
801001218085633[illegible]	POLYAMIDE COATING	-	89-012			OZF
80100126229793	POLYURETHANE PAINT	- 1993/01/01	89-012			OZF

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010012622297933461B	ALIPHATIC ISOCYANATE CATA LYST	- 1993/01/01				OZF
010012622298185570A	POLYURETHANE COATING GRAY	- 1993/01/01	89-012			OZF
010012659143334 61A	POLYURETHANE COATING WHITE	-	89-012		7471.18600	OZF
010012659143334 61B	POLYURETHANE COATING WHITE	-	89-012		15884.9580	OZF
010012659143334 61C	WHITE POLYURETHANE COATING TYPE I PART B 03-	-	89-012		7696.95900	OZF
010012659145334 61A	POLYURETHANE COATING GRAY	-	89-012			OZF
010012659145334 61B	POLYURETHANE CATALYST GRA Y	-	89-012			OZF
010012659151334 61A	POLYURETHANE COATING GRAY	-	89-012		44960	OZF
010012659151334 61B	POLYURETHANE COATING GRAY	-	89-012		8736	OZF
010012659154334 61A	POLYURETHANE COATING GLOSS RED 03-R-64	-	89-012		1216	OZF
010012659154334 61B	POLYURETHANE COATING GLOSS RED 03-R-64 PART	-	89-012		864	OZF
010012853035HAFBAA		-			1184	OZF
010012853035HAFBCA		-			1152	OZF
010012853038334 61A	POLYURETHANE COATING YELL OW	-	89-012		992	OZF
010012853038334 61B	POLYURETHANE COATING YELLOW	-	89-012		928	OZF
010012853048334 61A	POLYURETHANE COATING BLAC K	-	89-012		864	OZF
010012853048334 61B	POLYURETHANE CATALYST BLA CK	-	89-012		896	OZF
010012853554334 61A	POLYURETHANE COATING BLAC K	-	89-012		25468	OZF
010012853554334 61B	POLYURETHANE CATALYST BLACK	-	89-012		21716	OZF
010013055551334 61A	POLYURETHANE COATING GRAY	-	89-012		769216	OZF
010013055551334 61B	POLYURETHANE COATING GRAY	-	89-012		197485.029	OZF
010013121169855 70A	HIGH SOLIDS PRIMER YELLOW	-	89-012		72693.0329	OZF
010013121169855 70B	EPOXY PRIMER ACTIVATOR910X942	-	89-012		15502.2799	OZF
010013226622334 61A	POLYURETHANE COATING GRAY 26270	-	89-012		12160	
010013226622334 61B	POLYURETHANE COATING GRAY	-	89-012		5120	
010013226622HAFBBA		-			2432	OZF
010013226622HAFBBB		-			1312	OZF
010013226623334 61A	POLYURETHANE COATING GRAY	-	89-012		29632	OZF
010013226623334 61B	POLYURETHANE COATING GRAY	-	89-012		30592	OZF
010013226624334 61A	POLYURETHANE COATING GRAY	-	89-012		1568	OZF
010013226624334 61B	POLYURETHANE COATING GRAY	-	89-012		1184	OZF
010013228864334 61A	POLYURETHANE COATING GRAY03-GY-348	-			65	
010013228864334 61B	POLYURETHANE COATING GRAY03-GY-348 PART B	-			64	
010013228864HAFBBA		-			448	OZF
010013228864HAFBBB		-			480	OZF
010013279981334 61A	POLYURETHANE COATING GREEN		89-012		160	
010013279981334 61B	POLYURETHANE COATING GREEN		89-012		136	

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801001329630433461A	POLYURETHANE COATING BLUE	-			128	
801001329630433461B	POLYURETHANE COATING BLUE	-			128	
801001336303233461A	POLYURETHANE COATING GRAY	-			384	
8010013363032HAFBBB		-			384	OZF
801001336303333461A	POLYURETHANE COATING GRAY	-	89-012		224	
801001336303333461B	POLYURETHANE COATING GRAY	-	89-012		224	
8010013363034HAFBAA		-			5312	OZF
8010013363034HAFBBB		-			128	OZF
8010013363036HAFBAA		-			14656	OZF
8010013363036HAFBBA		-			3904	OZF
801001336398165860A		-			6272	OZF
801001344321833461A	POLYURETHANE COATING GRAY	-	89-012		36626	OZF
801001344321833461B	POLYURETHANE COATING GRAY	-	89-012		9520	
801001345653533461A	POLYURETHANE COATING GRAY	-	89-012		147720	OZF
801001345653533461B	POLYURETHANE COATING GRAY	-	89-012		56752	OZF
8010L002143F 85570A	HIGH SOLIDS PRIMER YELLOW	-				OZF
8010L002143F 85570B	HIGH SOLIDS CURING SOLUTION	-				OZF
8010P000986F 33461A	POLYURETHANE COATING ORANGE	-	86-012		416	OZF
8010P000986F 33461B	POLYURETHANE COATING ORANGE	-	86-012		1184	OZF
8010P000987F 33461A	POLYURETHANE COATING GRAY	-	89-012		2128	OZF
8010P000987F 33461B	POLYURETHANE COATING GRAY	-	89-012		1857	OZF
8010P000989F 33461A	POLYURETHANE COATING BLUE	-			160	OZF
8010P000989F 33461B	POLYURETHANE COATING BLUE	-			128	OZF
8010P03GN176 33461B	POLYURETHANE COATING GREEN	-				OZF
8010P03GN176 97460A	POLYURETHANE COATING	-				OZF
8010P03GN204 HAFBBA		-			128	OZF
8010P03GN204 HAFBBB		-			2689.97500	OZF
8010P03GY323 33461A	POLYURETHANE COATING GRAY	-	89-012		3944	OZF
8010P03GY323 33461B	ALIPHATIC ISOCYANATE CATA LYST	-	89-012		2216	OZF
8010P03GY330S33461A	POLYURETHANE COATING GRAY	-			512	OZF
8010P03X085 33461A	POLYURETHANE COATING CLEAR	-	89-012		992	OZF
8010P03X085 33461B	POLYURETHANE COATING CLEAR	-	89-012		992	OZF
8010P1801 6R552A	ACRYLIC LATEX WHITE	-			128	OZF
8010P319214F*96717A		-				
8010P319478F*96595A		-				
8010P400029F HAFBBA		-			384	OZF
8010P400030F F		-			384	OZF

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8010P4221T10206367A		-			258	OZF
8010P4221T10206367B		-			128	OZF
8010P4411 21361A	PAINT STRIPPER 4411	-	92-017		28160	OZF
8010P5075NP HAFBBA		-			21120	OZF
8010P887174F 33461A	EPOXY PRIMER COMP A GREEN	-				OZF
8010P887174F 33461B	EPOXY PRIMER COMP B GREEN	-				OZF
8010P887174F*33461A		-				
8010P887174F*33461B		-				
8010P887664F 33461B	POLYURETHANE COATING GRAY	-				OZF
8010P887664F*33461A		-				
8010P887664F*33461B		-				
8010P887665F 33461A	POLYURETHANE COATING GRAY	-				OZF
8010P887665F 33461B	POLYURETHANE COATING GRAY	-				OZF
8010P887665F*33461A		-				
8010P887665F*33461B		-				
8010P887666F 33461A	POLYURETHANE COATING GREEN	-	89-012		14432	OZF
8010P887666F 33461B	POLYURETHANE COATING GUNSHIP GREEN 03-GN-239	-	89-012		5328	OZF
8010P887669F 33461A	POLYURETHANE COATING GRAY	-				OZF
8010P887669F 33461B	POLYURETHANE COATING G/S GRAY	-				OZF
8010P887669F*33461A		-				
8010P887669F*33461B		-				
8010P887670F 33461A	POLYURETHANE COATING GREE N	-	89-012		13312	OZF
8010P887670F 33461B	POLYURETHANE COATING G/S GREEN	-	89-012		7712	OZF
8010P887989F 33461A	POLYURETHANE COATING BLUE	-				OZF
8010P920X348 33461A	URETHANE ACCELERATOR	-			160	OZF
8010P920X348 96595A	ACCELERATOR SOLUTION	-	89-012		192	OZF
3010PPMR 06629A		-				OZF
803000008719858339A	SEALING COMPOUND	-			4.409	OZF
80300000871988357 4A	PRO SEAL 870 PART A	-	90-093		59.994	OZF
80300000871988357 4B	POLYSULFIDE SEALING COMPOUND	-	90-093		145.482	OZF
803000008720583574B	SEALING COMPOUND	-				OZF
803000009502383527B	SEALING COMPOUND	-			1.764	OZF
80300000950238357 4B	POLYSULFIDE SEALING COMPO UND	-			14.108	OZF
80300006269508P855A	CORROSION PREVENTIVE COMPOUND	-				OZF
803000062758083574A	CORROSION PREVENTIVECOMPOUND	1986/12/04 - 1989/12/04	86-198	YES		OZF
80300006275819A232A	EROSION COATING	1986/12/04 - 1989/12/04	86-198	YES		
803000062844983574A	CORROSION PREVENTIVE COMPOUND					OZF

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303000081233342400A	ADHESIVE	-			128	OZF
803000086150686961A	EPON 828	-			7040	OZF
80300011127635V071A	ANAEROBIC WICKING COMPOUND	-			32	OZF
303000251398007431A	LEAD-FREE ANTISEIZE CMPD	-				OZF
303000291838004011A		-			192	OZF
803000344366683574A	SEALING COMPOUND	-			7936	OZF
803000348788883574A	SEALING.COMPOUND	-			10.581	OZF
803000433903283574A	SEALING COMPOUND	-	90-093		288	OZF
803000474141983574A	SEALING COMPOUND	-	90-093		3340.97999	OZF
803000485920001139B	SEALING COMPOUND	-			32	OZN
803000573291772556A	METAL ETCH PRIMER BLACK	-				OZF
803000582519182814A	SEALING COMPOUND	-			318	OZN
803000683901407681D	SEALING COMPOUND TAPE	-				OZF
803000762880783574B	SEALING COMPOUND	-				OZF
803000779470004963A	SEALING COMPOUND	-				OZF
803000823803933150A	CORROSION RESISTANT COATING	-				OZF
803000838778991794A	CORROSION PREVENTIVE COMPOUND	-				OZF
303000850075804011A	GC-408 CLASS B	-				OZF
303000871848983527A	PRO-SEAL 870 BASE SPRAYABLE	-			37.033	OZF
803000871848983574A	SEALING COMPOUND	-	89-012		5309.04900	OZF
803000871848983574B	POLYSULFIDE SEALING COMPO UND	-	89-012		20177.4190	OZF
803000904576033333A	ER11-955 A&BNATURAL COLOR(INC ALL COLORS)	-				OZF
803000936994004963A	SCOTCHAL BRAND EDGE SEALER 3950	-			28	OZF
303001041159656921A	AML-GARD, CORROSION PREVENTIVE COMPD, TY	-				OZF
803001043764584063A	CHEMICAL CONVERSION COATING	-			49280	OZF
303001126142760922A	POLYURETHANE COATING RAIN AND THERMAL RESIST	-	89-012			OZF
303001126142760922B	FLUOROELASTOMER TYPE VSEALING COMPOUND PART	-				OZF
303001127196060922A	FLUOROELASTOMER COATING	-	89-012			OZF
803001127196060922B	POLYURETHANE CURING AGENT	-	89-012			OZF
803001154925683574A	SEALING COMPOUND	-				OZF
803001184032280NY89A		-			304	OZF
803001184032883574A	SEALING COMPOUND	-	90-093		141	OZF
803001184032883574B	SEALING COMPOUND	- 1993/01/01	90-093		686	OZF
803001184032983574A	SEALING COMPOUND	-	90-093		3970.82600	OZF
803001184032983574B	POLYSULFIDE SEALING COMPOUND	-	90-093		740.64	OZF
80300128781852	BMS 3-2 TYPE I SOLVENT	-				OZF
303001293322						OZF

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8030P113125A 33244A		-			384	OZF
8030P113125A 33244B		-			384	OZF
8030P400067F 61102A	CHEMICAL CONVERSION COATING	-	90-040		7040	
8030P400067F HAFBBA		-			63360	OZF
8030P71 03795A		-				OZF
8030PACCELAGO61102A	ACCELAGOLD ALODINE	-			21120	OZF
804000065657876381A	PRIMER, ADHESIVE	-			34032	OZF
804000065657876381B	PRIMER, ADHESIVE	-			25988	OZF
804000092281633564A	608 HYSOL ADHESIVE	-				OZF
804000092281696900A	EPOXY ADHESIVE	-			0.141	OZF
804000097652401139A		-				OZF
804000117851071984A	RTV SEALANT	-				OZF
804000118269571984A	ADHESIVE	-				OZF
804000123695404963B	EPOXY ADHESIVE	-				OZF
804000142919360859A	CYANOACRYLATE ADHESIVE TB1743	-				OZF
804000145053004963B	ADHESIVE	-				OZF
804000157867792528A		-				OZF
804000157867792528B		-				OZF
8040001658614HAFBAA		-			192	OZF
804000171153576381A	SCOTCH 6065 SPRA-MOUNT ADHESIVE	-			16	OZF
804000181776104963A	ADHESIVE	-			1	OZF
804000221381176381A	ADHESIVE	-			128	OZF
804000262906081349A	ADHESIVE	-			5504	OZF
80400027386970HZU1A	LA-132 SYNTHETIC RUBBER ADHESIVE	-				OZF
804000298194625670A	ADHESIVE RUBBER	-			8	OZF
804000298194692528A	SC-840	-				OZF
804000390795904963A	ADHESIVE, RUBBER & GASKET	-			32	OZF
804000466591455849A	ADHESIVE	-			128	
804000526191060777A	PVC ADHESIVE	-				OZF
80400073864293L885A		-				OZF
80400073864293L885B		-			11	OZF
804000777063181348A		-				OZF
804000779959533333A	1113B ADHESIVE, MMM-A-130B	-				OZF
804000860977219139A	ADHESIVE	-				OZF
804000916853404963A	EPOXY ADHESIVE, TWO PART	-			128	OZF
804000938686031868A	RUBBER ADHESIVE	-			96	OZF
804000995708094959A	ADHESIVE	-			128	OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
804001024698860859A	CYANOACRYLATE ADHESIVETB1743	-			4	OZF
8040010246988HAFBBA		-			155.741	OZN
804001175919333564A	ADHESIVE	-				OZF
8040012827954HAFBAA		-			7456	OZF
8040012827954HAFBBA		-			1888	OZF
804001318553121109A	MODIFIED EPOXY-AMINE RESIN	-				OZF
8040L885794F 57432A		-			32	OZF
8040P400096F 85570A		-			5120	OZF
8040P400096F 85570B		-			2048	OZF
8040P400096F HAFBBA		-			2944	OZF
8040P400096F HAFBBB		-			4096	OZF
914000286528 66G027A		-			256	OZF
915000024962371984A	DC200-1000,CENTISTROKES	-			1536	
91500007147127B131A	CAPELLA OIL WF-68, CODE 01562	-				OZF
91500011102095A565A	MIL-L-21260C,GRADE30.	-				OZF
91500014502685 4527A	AEROSHELL GREASE 22	-			288	OZF
91500018898677A348A	MIL-L-2104 SAE 50	-				OZF
915000223413407950A	HYDRAULLIC FLUID, PETROLEUM	-				OZF
91500023166767A348A	MIL-L-6081C, GC1010, LUBRICATING OIL,JET ENG	-			28160	OZF
915000231906286459A	PETROTECT 4072C	-			512	
9150002500926 4S446A	TECHNICAL PETROLATUM	-				OZF
915000250092682925A	PETROLATUM, TECHNICAL	-				OZF
915000261789925705A	PENETRATING OIL	-				OZF
91500026178996T203C		-				OZF
915000261789982925A	PENETRATING OIL, VV-P-216, TYPE I	-			32	OZF
915000273238907950A	LUBRICATING OIL, GENERAL PURPOSE	-			58	OZF
915000273238982925A	L BRICATING OIL,GENERALPURPOSE	-			25	OZF
915000273238992895A	LUBRICATING OIL	-			4	OZF
915000450693873277A	CUTTING FLUID	-			96	OZF
915000458007507950A	LUBRICATING OIL,GENERAL PURPOSE	-			32	
915000458007527978A	LUBRICATING OIL,GENERAL PURPOSE	-				OZF
915000458007556921A	LUBRICATING OIL,GENERAL PURPOSE	-			48	OZF
915000458007582956A	LUBRICATING OIL, GENERAL PURPOSE	-				OZF
915000542143082956A	LUBRICATING OIL,GENERALPURPOSE	-				OZF
91500069823828X531A	DEXRON II ATF;HYDRAULIC FLUID	-				OZF
91500090513871[illegible]	KANO AEROKROIL	-				OZF
9150009668833[illegible]	HYDRAULIC 8-46	-				OZF

LIST OF ALL MATERIALS IN A ZONE

ZONE	ZONE DESCRIPTION
Z140	PAINTERS 220 LAOSAC

MATERIAL NUMBER	MATERIAL DESCRIPTION	DATE RANGE	LICENSE NO	HAZARD	QTY ISSUED TO-DATE	UNIT OF ISSUE
915000985723358563A	IMPERIAL 2075TH,, QUAL #634-D-346	-				OZF
915001035539229700A	WS 1311 GEAR OIL 80W-90	-			1	OZF
915001035539301326A	HDX ALL PURPOSE GEAR LUBESAE 80W/90	-			4	OZF
915001108708109137A	CORROSION PREVENTIVE COMPOUND	-			60	OZF
9150L888958F 15958A	BEARING GREASE	-			32	OZF
9150P600WCYLO3U728A		-				OZF
9150P87746-8071984A		-				OZF
F4265089P132662758A		-				OZF

PAINT BOO VENTORY

Bldg	AQUIS #	AO	Mnfgr	Model	CFM	Type	Stack Dia. in		
5D	3314	BAQE-977-1	Binks	WE-10-8-T-LH	10,500	Water Fall	34"		
5E	3332	Needs Permit	Binks		5,000*	Dry	18"		
5N	3859	DAQE-167-92	DeVilbiss	DF-564	2,000	Dry	12"		
12	3953	Grandfathered	Custom		10,500*	Dry	36"		
48	3649	7/18/83	Custom		140,000	Dry	60"		
48	3650	Needs Permit	JBI	WT-35-SB	15,000	Dry	48"		
100J	3292	Needs Permit	DeVilbiss	DCC-5081	13,500	Water Fall	48"		
205	4198	Inactive							
220	3116	DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		
220		DAQE-167-92	Binks		18,500	Water Fall	2 @ 48"		

Note, these 9 seperate waterfalls make up one booth that is segregated by curtains and can be configured in various ways to accn different aircraft. At present it is seperated by cuirtains into 3 bays.

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Attach 1

ATCH 1-2

220	3117	DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
220		DAQE-036-87	DeVilbiss		11,500*	Water Fall	60"		
Note, these 6 pieces of equipment make up one booth that is segregated by curtains and can be configured in various ways to acc									
	different aircraft. At present it is sererated by curtains into 3 bays.								
220	3118	Grandfathered	DeVilbiss		3,600*	Water Fall	6 @ 36"		
220	3978	Grandfathered	DeVilbiss	2000	10,800*	Water Fall			
220	3073	Grandfathered	DeVilbiss	2000	10,800*	Water Fall			
238	4265	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4268	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4271	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4274	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4277	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4280	BAQE-525-88	Binks	NPB-15-10-TLH	12,000	Water Fall	36"		
238	4244	BAQE-525-88	Binks	WE-8-8-TLH	8,000*	Water Fall	24		
238	4.1[illegible]		De 1 1681		45,000	"	2@20"		
266	3838	Grandfathered	DeVilbiss		10,000*	Water Fall	48"		
266	3839	Grandfathered	DeVilbiss	J-K4214	10,000*	Water Fall	48"		
266	3840	Grandfathered	Custom		15,000*	Water Fall	48"		
270	3903	BAQE-454-89	JBI	C-130 Custom	470,000	Dry	6 @ 60"		
~~274~~	3402	BAQ-973-1	DeVilbiss	XNO-568	6,000*	Water Fall	42"		
505	3263	Needs Permit	Paasch	O962	7,500*	Water Fall	42"		
507	3050	BAQE-551-89	DeVilbiss		25,000	Water Fall	2 @ 42"		
507	3053	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		

delete

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507	3054	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3055	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3056	8/21/78	DeVilbiss	XNE-50415	14,000	Water Fall	48"		
507	3057	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
507	3058	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
507	3251	8/21/78	DeVilbiss	XNE-5151	27,175	Water Fall	42"		
509	3150	BAQE-494-89	DeVilbiss	DCL-1689-125	16,000	Water Fall	34"		
509	3151	BAQE-494-89	DeVilbiss	DCL-1689-125	16,000	Water Fall	34"		
509	3153	BAQE-494-89	DeVilbiss	DF-6220	2,141	Dry	16"		
509	4058	BAQE-494-89	DeVilbiss	DF-6220	2,141	Dry	16"		
509	34410 34411		DeVilbiss	TL-L-141030-125	18	200	Wet, Fall	10"	
514	3102	BAQE-174-91	DeVilbiss	DF-L-676-125	5,250	Dry	24"		
515	4100	PAQE-165-92							
534	3737	BAQE-359-88	Custom		12,000	Dry	16"		
590	3929	Needs Permit			6,000*	Water Fall	36"		
592	3931	Needs Permit	Protectaire		10,000*	Water Fall	36		
751	4161	BAQE-492-92	Binks		3,500	Dry	18"		
810	4217	Needs Permit	DeVilbiss		8,000*	Dry	42"		
847	~~3155~~ 3156	BAQE-030-88	Binks	NPB-24-20-T	193,600	Water Fall	8 @ 36"		
847	3247	Needs Permit	Binks	NPB-14-10-T-LH	15,000*	Water Fall	48"		
847	3248	Needs Permit	Binks		16,000*	Water Fall	48"		
935	None	Inactive							
935									
1133	3734	BAQE-029-88	Custom		43,000	Dry	60"		

PAINT BOO. VENTORY

1251	3741	BAQE-101-89	Binks		27,000	Dry	42"		
1424	4256	BAQE-355-88	Binks	TWW-530-T-LO	25,200	Water Fall	48"		
1701	3915	BAQE-039-91	DeVilbiss	ASEY-914-34	18,000	Dry	34"		
1701	3919	BAQE-039-91	JBI	TSD-98-DT-S	190,000	Dry	6 @ 60"		
1913	3728	BAQE-026-88	DeVilbiss	XDF-6342	17,900	Dry	42"	Stall	
1938	3560	BAQE-642-88	Binks		10,000*	Dry			
2026	3732	BAQE-977-1	Binks	PFA-12-10-T-LH	15,000	Dry	34"		

(*) Estimated CFM's

ATCH 1-4

SCREEN Model Inputs for Paint Booth AQUIS #3903 Bldg 270

1. Material usage data for this booth identified the following three paints as having the greatest usage.

8010012137898	Polyester Koroflex Primer
8010013226622	50-50 Polyurethane Paint
8010013121169	75-25 Epoxy Paint

2. Model Inputs

EMISSIONS RATE

Emissions Rate was estimated based upon the following analysis;

Historically paint usage is typically broken down as 71% low VOC top coat (3.4 lb/gal), 14.5% low VOC primer (2.8 lb/gal), 14.5% high VOC primer (3.5 lb/gal).

Based upon the Approval Order for this booth, BAQE-454-89, the density of primers must not exceed 8 lb/gal while the density of paints must not exceed 11 lb/gal. Based upon this the VOC and non VOC components of the coatings are as follows;

Low VOC Primer= 8 lb/gal= 2.8 lb VOC/gal + 5.2 lb Solids/gal

High VOC Primer= 8 lb/gal= 3.5 lb VOC/gal + 4.5 lb Solids/gal

Paint= 11 lb/gal = 3.4 lb VOC/gal + 7.6 lb Solids/gal

A weighted average was used to estimate the emissions rates of both VOC's and solids. Hours of operation used in calculation are from approval order.

VOC Emissions

(.71 X 3.4 lb VOC/gal paint) + (.145 X 2.8 lb VOC/gal low VOC primer) + (.145 X 3.5 lb VOC/gal high VOC primer) X 2,096.7 gal/yr X 454 gm/lb X 1 yr/52 wks X 1 wk/5 day X 1 day/16 hr X 1 hr/60 min X 1 min/60 sec **=.211 gm/sec of VOC emissions** (Assume 100% of VOCs are emitted)

Solids emissions

(.71 X 7.6 lb solids/gal paint) + (.145 X 5.2 lb solids/gal low VOC primer) + (.145 X 4.5 lb solids/gal low VOC paint) X 2,096.7 gal/yr X 454 gm/lb X 1 yr/52 wks X 1 wk/5 day X 1 day/16 hr X 1 hr/60 min X 1 min/ 60 sec = **.432 gm/sec**

Assume 75% of solids are deposited on part and 25% is considered over spray.

.432 gm/sec X .25 = .108 gm/sec solid

Assume that the filter system has a capture efficiency of 90% therefore the actual amount of solids emitted to the atmosphere is;

.108 lb solid X .10 = .011 gm/sec

Screen Model will be run twice using an emission rate of .211 gm/sec to estimate VOC emissions and .011 gm/sec to compute emissions of solids.

STACK HEIGHT

73 ft X 12 in/ft X .0254 m/in = 22.25 meters

STACK DIAMETER

6 ea 60 in (Assume all emissions up one stack)

60 in X .0254 m/in = 1.52 meters

STACK VELOCITY

110 ft/min X 12 in/ft X .0254 m/in X 1 min/60 sec = .56 meter/sec

STACK GAS TEMP

Assume 75° F which is approximately 24° C = 297° K

AMBIENT AIR TEMP

Use default 293° K

DISTANCE TO FENCE LINE

3,700 ft X 12 in/ft X .0254 m/in = 1,128 meter

MODEL RESULTS (Printouts attached)

VOCs emission at fence line were calculated to be 8.138 ug/m^3
Solids emission at fence line were calculated to be .4242 ug/m^3

COMPONENT EMISSIONS

Department of Air Quality personnel requested that component emissions be computed and compared against the TLV/100 for each. The following analysis is based upon the MSDS for each material identified above.

NSN #8010012137898 Polyester Koroflex Primer

compound/% of tot	% of VOC	%of solid
Methyl N-Amyl Ketone/9	16	0
Methyl Ethyl Ketone/32	58	0
Polyeric Urethane Resin/23	0	51
Strontium Chromate/18	0	40
Cyclohexanone/14	26	0
Ethylene Bisphenyl Isocyanate/4	0	9

VOC at Fence line = 8.138 ug/m^3

Methyl N-Amyl Ketone (MW=114)

TLV = 50 ppm, TLV/100 = .5 ppm = 500 ppb
.16 X 8.138 ug/m^3 = 1.3 ug/m^3, at fence
1.3 ug X1 u mole/114 ug = .011 u mole X 1 mole/10^6 = 1.1 X 10^{-8} X .0224=
2.46X 10^{-10} =**.246 ppb < 500 ppb**

Methyl Ethyl Ketone

TLV = 590 mg/m^3, TLV/100= 5.9 mg/m^3
.58 X 8.138 ug/m^3 = 4.72 ug/m^3, at fence
4.72 ug/m^3 < 5.9 mg/m^3

Cyclohexanone

TLV= 100 mg/m^3, TLV/100 = 1 mg/m^3
.26 X 8.138 ug/m^3 = 2.12 ug/m^3, at fence
2.12 ug/m^3 < 1 mg/m^3

Solids at fence line = .4242 ug/m^3

Polyeric Urethane Resin

TLV undetermined; none found in literature
.51 X .4242 ug/m^3 = **.216 ug/m^3**

Strontium Chromate

TLV = .05 mg/m^3, TLV/100 = .5 ug/m^3
.40 X .4242 ug/m^3 = **.17 ug/m^3 < .5 ug/m^3**

Ethylene Bisphenyl Isocyanate (MW =250)

TLV = 5 ppb, TLV/100 = .05 ppb
.09 X .4242ug/m^3 = .04 ug/m^3
.04 ug X 1 u mole/250 ug = .00016 u mole X 1 mole/10^6 u mole = 1.6 X 10^{-10} mole
1.6 X 10^{-10} mole X .0224= 3.6 X 10^{-12}
.003 ppb < .05 ppb

NSN # 8010013226622 (Two part Mix 50-50)

compound/% tot	VOC %	Solid %
n-Butyl Acetate/7.5	14	0
Ethyl 3-Ethoxypropionate/10	18	0
Xylene/0.5	1	0
Methyl Ethyl Ketone/2.5	4.5	0
Toluene/2.5	4.5	0
2-4 Pentanedione/2.5	0	10
Aliphatic Isocynate/10	19	0
C_8-C_{10} Aromatics/2.5	4.5	0
Methyl Isobutyl Ketone/17.5	33	0
Miscellaneous/44.5	0	90

VOC Emission at the fence line = 8.138 ug/m^3

n-Butyl Acetate (MW = 116.18)

TLV = 150 ppm, TLV/100 = 1.5 ppm
.17 X 8.138 ug/m^3 = 1.4 ug/m^3
1.4 ug X 1 u mole/116.18 ug =.012 u mole X 1 mole/10^6 u mole =
1.2 X 10^{-8} mole X .0224 = 2.69 X 10^{-10} = **.269 ppb < 1.5 ppm**

Ethyl 3-Ethoxypropionate

TLV not established; none found in literature
.23 X 8.138 ug/m^3 = **1.87 ug/m^3**

Xylene

TLV = 435 mg/m^3, TLV/100 = 4.35/m^3
.01 X 8.138 ug/m^3 = **.08 ug/m^3 < 4.35 mg/m^3**

Methyl Ethyl Ketone

TLV= 590 mg/m^3, TLV/100 = 5.9 mg/m^3
.06 X 8.138 ug/m^3 = **.49 ug/m^3 < 5.9 mg/m^3**

Toluene

TLV = 375 mg/m^3, TLV/100 =3.75 mg/m^3
.06 X 8.138 ug/m^3 = **.49 ug/m^3 < 3.75 mg/m^3**

C_8-C_{10} Aromatics (assume ave MW = 108)

TLV = 100 ppm, TLV/100 = 1 ppm
.06 X 8.138 ug/m^3 = .49 ug/m^3
·49 ug X 1 u mole/108 u g = .0045 u mole X 1 mole/10^6 u mole = 5 X 10^{-9} mole X .0224 = 1.0 X10^{-10} = **.1 ppb < 1 ppm**

Methyl Isobutyl Ketone

TLV =205 mg/m^3, TLV/100 = 2.05 mg/m^3
.41 X 8.138 ug/m^3 = **3.34 ug/m^3 < 2.05 mg/m^3**

Solids Emission at fence line = .4242 ug/m^3

2-4 Pentanedione

TLV not established, not found in literature
.05 X .4242 ug/m^3 = **.02 ug/m^3**

Aliphatic Isocyanate (MW=168.22)

TLV = 5 ppb, TLV/100 = .05 ppb
.17 X .4242 ug/m^3 X .2 = .07 ug/m^3
.07 ug X 1 u mole/168.22 ug = .0004 u mole X 1 mole/10^6 u mole = 4.2 X 10^{-10} mole X .0224 = 9.3 X10^{-12} = **.009 ppb < .05 ppb**

Miscellaneous

TLV not established;
.95 X .4242 ug/m^3 = .403 ug/m^3

NSN # 8010013121169 (Two part mix 75-25)

compound/%tot	% VOC	% Solids
Epoxy Resin/22.5	0	30
Methyl N-Amyl Ketone/3.75	15	0
Xylene/3.75	15	0
Ethyl-3 Ethoxy Propionate/3.75	15	0
Toluene/10	40	0
Strontium Chromate/15	0	20
Crystalline Silica- Quartz/15	0	20
Titanium Dioxide/3.75	0	5
Proprietary B/17.5	0	23.3
Aliphatic Amine/2.5	10	0
Isopropyl Alcohol/1.25	5	0
Additive B/1.25	0	1.7

VOC emission at fence line = 8.138 ug/m^3

Methyl N-Amyl Ketone (MW = 114)

TLV = 50 ppm, TLV/100 = .5 ppm = 500 ppb
.15 X 8.138 ug/m^3 = 1.22 ug/m^3
1.22 ug X 1 u mole/114 ug = .0107 u mole X 1 mole/106 u mole =
1.1 X 10^{-8} mole X .0224 = 2.4 X 10^{-10} = **.24 ppb < 500 ppb**

Xylene

TLV = 435 mg/m^3, TLV/100 = 4.35 mg/m^3
.15 X 8.138 ug/m^3 = **1.22 ug/m^3 < 4.35 mg/m^3**

Ethyl-3 Ethoxy Propionate

TLV not established, no reference found in literature
.15 X 8.138 ug/m^3 = **1.22 ug/m^3**

Toluene

TLV = 375 mg/m^3, TLV/100 = 3.75 mg/m^3
.4 X 8.138 ug/m^3 = **3.26 ug/m^3 < 3.75 mg/m^3**

Aliphatic Amine

TLV not established, no reference in literature
.1 X 8.138 ug/m^3 = **.81 ug/m^3**

Isopropyl Alcohol (MW = 60.11)

TLV = 400 ppm, TLV/100 = 4 ppm
.05 X 8.138 ug/m^3 = .4 ug/m^3
.4 ug X 1 u mole/60.11 ug = .0067 u mole X 1 mole/10^6 u mole =
7 X 10^{-9} mole X .0224 = 1.5 X 10^{-10} = **.15 ppb < 4 ppm**

Solids Emission at Fence line = .4242 ug/m^3

Epoxy Resin

TLV not established, no reference found in literature
.3 X .4242 ug/m^3 = **.13 ug/m^3**

Strontium Chromate

TLV = 50 ug/m^3, TLV/100 = .5 ug/m^3
.2 X .4242 = **.085 ug/m^3 < .5 ug/m^3**

Crystaline Silica Quartz (MW = 60.09)

TLV = 100 ppb, TLV/100 = 1 ppb
.2 X .4242 ug/m^3 =.085 ug/m^3
.085 ug X 1 u mole/60.09 ug = .0014 u mole X 1 mole/10^6 u mole=
1 X 10^{-9} mole X .0224 = 3.136 X10^{-11} = **.03 ppb < 1 ppb**

Titanium Dioxide

TLV = 10 mg/m^3, TLV/100 = .1 mg/m^3
.05 X .4242 ug/m^3 = **.021 ug/m^3 < .1 mg/m^3**

Proprietary B

TLV not established
.233 X .4242 ug/m^3 = **.1 ug/m^3**

Additive B

TLV not established
.017 X .4242 ug/m^3 = **.007 ug/m^3**

10-19-93
11:17:29

*** SCREEN-1.1 MODEL RUN ***
* VERSION DATED 88300 ***

270 AQUIS #3903 BAQE-454-89 Other Emissions

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.1100E-01
STACK HEIGHT (M)	=	22.25
STK INSIDE DIAM (M)	=	1.52
STK EXIT VELOCITY (M/S)	=	.56
STK GAS EXIT TEMP (K)	=	297.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	1
BUILDING HEIGHT (M)	=	.00
MIN HORIZ BLDG DIM (M)	=	.00
MAX HORIZ BLDG DIM (M)	=	.00

BUOY. FLUX = .04 M**4/S**3; MOM. FLUX = .18 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN DISCRETE DISTANCES ***
****

TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1128.	.4242	5	1.0	1.3	5000.0	28.6	103.0	55.1	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.4242	1128.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

10-19-93
11:12:35

*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED 88300 ***

g 270 AQUIS #3903 BAQE-454-89 VOC Emissions

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.2110
STACK HEIGHT (M)	=	22.25
STK INSIDE DIAM (M)	=	1.52
STK EXIT VELOCITY (M/S)	=	.56
STK GAS EXIT TEMP (K)	=	297.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	1
BUILDING HEIGHT (M)	=	.00
MIN HORIZ BLDG DIM (M)	=	.00
MAX HORIZ BLDG DIM (M)	=	.00

BUOY. FLUX = .04 M**4/S**3; MOM. FLUX = .18 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN DISCRETE DISTANCES ***
****

TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1128.	8.138	5	1.0	1.3	5000.0	28.6	103.0	55.1	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	8.138	1128.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

SCREEN Model Results for Paint Booth AQUIS #3050 Bldg 507

1. Material usage data for this booth identified the following as the paint applied in this booth.

   8010P001369F Desothane 420

2. Model Inputs

   EMISSION RATE Emission rate was based upon the following analysis;

   Based upon the past years 12 mo rolling total paint usage was 535.5 gal.

   Based upon the MSDS's for this material the density of a gallon of sprayed material is 10.35 lb/gal. Of this assume 3.4 lb/gal is VOC while the remaining 6.95 lb/gal are solids.

   VOC Emissions

   3.4 lb/gal X 535.5 gal /yr X 454 gm/lb X 1 yr/ 52 wks X 1 wk/5 day X 1 day/8 hr X 1 hr/60 min X 1 min/60 sec = .11 gm/sec

   Solids Emission

   6.95 lb/gal X 535.5 gal/yr X 454 gm/lb X 1 yr/52 wks X 1 wk/5 day X 1 day/8 hr X 1 hr/60 min X 1 min/60 sec = .23 gm/sec

   Assume 75% of solids attach to part and 25% is over spray

   .25 X .23 gm/sec = .06 gm/sec

   Assume the filter system has a capture efficiency of 90%, therefore the actual amount of solids released to the atmosphere is;

   .1 X .06 gm/sec = .006 gm/sec

   STACK HEIGHT

   45 ft X 12 in/ft X .0254 m/in = 13.7 m

   STACK DIAMETER

   2 ea, 42 " diameter. (Assume all emissions up one stack)
   42 in X .0254 m/in = 1.07 m

   STACK VELOCITY

   110 ft/min X 12 in ft X .0254 m/in X 1 min/ 60 sec = .56 m/sec

STACK GAS TEMP

Assume 75° F which is approximately 24° C = 297° K

AMBIENT AIR TEMP

Use default 293° K

DISTANCE TO FENCE LINE

1,800 ft which is approximately 550 meters

MODEL RESULTS

VOC emissions at the fence line were calculated to be 14.75 ug/m^3
Solids emissions at the fence line were calculated to be .8046 ug/m^3

COMPONENT EMISSIONS

Department of Air Quality personnel requested that component emissions be computed and compared against the TLV/100 for each. The following analysis is based upon the MSDS for the material identified above.

NSN #8010P001369

compound/% of Tot	% of VOC	% of Solid
Methyl Ethyl Ketone/26.5	45	0
Ethyl 3-Ethoxy Propionate/5	8.5	0
Cyclohexanone/12.5	21	0
N-Butyl Acetate/6	10	0
Ketone/3	5.5	0
Resins & Pigments/8.5	0	21
Methyl N-Amyl Ketone/3	5.5	0
Titanium Dioxide/11	0	27
Methyl Propyl Ketone/2	3	0
Aromatic Solvent/1	1.5	0
Aliphatic Polyisocyanate/21	0	51
Stabilizer/.5	0	1

VOC at Fence line = 14.75 ug/m^3

Methyl Ethyl Ketone

TLV = 590 mg/m^3 , TLV/100 = 5.9 mg/m^3
.45 X 14.75 ug/m^3 = **6.64 ug/m^3 < 5.9 mg/m^3**

Ethyl 3-Ethoxy Propionate

TLV not established, none found in literature.
.085 X 14.75 ug/m^3 = **1.25 ug/m^3**

Cylcohexanone

TLV = 100 mg/m^3, TLV/100 = 1 mg/m^3
.21 X 14.75 ug/m^3 = **3.1 ug/m3 < 1 mg/m^3**

N-Butyl Acetate (MW = 116.18)

TLV = 150 ppm, TLV/100 = 1.5 ppm
.10 X 14.75 ug/m^3 = 1.45 ug/m^3
1.45 ug X 1 ug/116.18 ug = .012 u mole X 1 mole/10^6 u mole =
1.2 X 10^{-8} X .0224 = 2.69 X 10^{-10} = **.269 ppb < 1.5 ppm**

Ketone

TLV not established for this generic compound
.055 X 14.75 ug/m^3 = **.81 ug/m^3**

Methyl N-Amyl Ketone (MW=114)

TLV = 50 ppm, TLV/100 = .5ppm = 500 ppb
.055 X 14.75 ug/m^3 = .81 ug/m^3
.81 ug X 1 u mole/114 ug = .007u mole X 1 mole/10^6 u mole =
7 X 10^{-9} X .0224 =1.56 X 10^{-10} = **.156 ppb < 500 ppb**

Methyl Propyl Ketone (MW = 86.13)

TLV = 200 ppm, TLV/100 = 2 ppm
.03 X 14.75 ug/m^3 = .44 ug/m^3
.44 ug X 1 u mole/86.13 ug = .005 u mole X 1 mole/10^6 u mole =
5 X 10^{-9} X .0224 = 1.1 X 10^{-10} = **.11 ppb < 2 ppm**

Aromatic Solvent

TLV not established
.015 X 14.75 ug/m^3 = **.22 ug/m^3**

Solids at Fence Line = .8046

Resins & Pigments

TLV not established
.21 X .8046 ug/m^3 = **.169 ug/m^3**

Titanium Dioxide

TLV = 10 mg/m^3, TLV/100 = .1 mg/m^3
.27 X .8046 ug/m^3 = **.217 ug/m^3 < 100 ug/m^3**

Aliphatic Polyisocyanate (Assume MW = 168.22)

TLV = 5 ppb, TLV/100 .05 ppb
.51 X .8046 ug/m^3 = .41 ug/m^3
.41 ug X 1 u mole/168.22 ug = .002 u mole X 1 mole/10^6 u mole=
2 X 10^{-9} mole X .0224 = 4.4 X 10^{-11} = **.044 ppb < .05 ppb**

Stabilizer

TLV not established
.01 X .8046 ug/m^3 = **.08 ug/m^3**

11-08-93
10:38:11

```
*** SCREEN-1.1 MODEL RUN ***
    VERSION DATED  88300 ***

Bldg 507 AQUIS #3050 AO# BAQE-551-89, Solids

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =    POINT
   EMISSION RATE (G/S)      =  .6000E-02
   STACK HEIGHT (M)         =   13.70
   STK INSIDE DIAM (M)      =    1.07
   STK EXIT VELOCITY (M/S)=      .63
   STK GAS EXIT TEMP (K)    =  297.00
   AMBIENT AIR TEMP (K)     =  293.00
   RECEPTOR HEIGHT (M)      =     .00
   IOPT (1=URB,2=RUR)       =    1
   BUILDING HEIGHT (M)      =     .00
   MIN HORIZ BLDG DIM (M) =       .00
   MAX HORIZ BLDG DIM (M) =       .00


BUOY. FLUX =     .02 M**4/S**3;  MOM. FLUX =     .11 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

    TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
550.	.8046	5	1.0	1.1	5000.0	20.0	54.8	32.7	NO

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************
```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.8046	550.	0.

```
**************************************************
 EMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

10-26-93
15:27:29

```
*** SCREEN-1.1 MODEL RUN ***
    VERSION DATED  88300 ***

Bldg 507 AQUIS #3050 AO#-551-89, VOC

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =    POINT
   EMISSION RATE (G/S)      =    .1100
   STACK HEIGHT (M)         =    13.70
   STK INSIDE DIAM (M)      =     1.07
   STK EXIT VELOCITY (M/S)=       .63
   STK GAS EXIT TEMP (K)    =   297.00
   AMBIENT AIR TEMP (K)     =   293.00
   RECEPTOR HEIGHT (M)      =      .00
   IOPT (1=URB,2=RUR)       =     1
   BUILDING HEIGHT (M)      =      .00
   MIN HORIZ BLDG DIM (M) =        .00
   MAX HORIZ BLDG DIM (M) =        .00


BUOY. FLUX =     .02 M**4/S**3;  MOM. FLUX =     .11 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

   TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)   (M)    HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   550.   14.75        5     1.0    1.1  5000.0    20.0    54.8    32.7    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       14.75          550.       0.


**************************************************
   REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
   **************************************************
```

DESOTO, INC. 85570 UUU939 Prepared: 10/29/9

SECTION I - PRODUCT IDENTIFICATION 8010P00136

Manufacturer: DESOTO, INC. part B
BOX 5030
1700 S. MOUNT PROSPECT RD. haz
DES PLAINES IL 60017

Information Phone: 708/391-9000
Emergency Phone: 708/391-9000
CHEMTREC Phone: 1-800-424-93

Hazard Ratings: Health -
none -> extreme Fire -
0 ---> 4 Reactivity -

Product Class: ISOCYANATE
Trade Name : CURING SOLUTION
Product Code : 910X819 (1)
C.A.S. Number: NA-MIXTURE
Prepared By : WILLIAM P. JOYCE
Title : CORPORATE SAFETY MANAGER

SECTION II - INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits ACGIH/TLV	Exposure Limits OSHA/PEL	VP mm H
N-BUTYL ACETATE	123-86-4	11.	150 ppm	150 ppm	8.2
		STEL=	200	200	
ALIPHATIC POLYISOCYANATE	TRADE SECRET	84.	Undetermined		0
HEXAMETHYLENE DIISOCYANATE (HDI) [822-06-2] LESS THAN 0.07% AT TIME OF MANUFACTURE BASED ON RESIN SOLIDS. THE FREE MONOMER CONTENT MAY RISE TO A MAXIMUM OF 1.6% AFTER 3 TO 6 MONTHS STORAGE. A TLV OF 0.005 PPM HAS BEEN ESTABLISHED FOR HDI.					
AROMATIC SOLVENT	64742-94-5	4.7	Undetermined		0

*** ALL Ingredients in this product are listed in the T.S.C.A. Inventory.

IF AN INGREDIENT IS LISTED WITH A SINGLE ASTERISK, THE CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

PERCENT BY WEIGHT:
TO NEAREST 5% FOR SUBSTANCES 5-95%
<5.0% FOR SUBSTANCES 1.0-5.0%

S=SKIN; C=CEILING LIMIT
NE=NOT ESTABLISHED
NA=NOT APPLICABLE

SECTION III - PHYSICAL DATA

Boiling Range: 249 - 418 Deg. F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 100%

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 9.28 Pounds.
Spec. Gravity: 1.11

Appearance: LIQUID, SOLVENT ODOR
V.O.C.: 178 G/L

MATERIAL SAFETY DATA SHEET
DESOTO, INC.

000939 11/26/90

8010P01369F Prepared: 10/15/90

SECTION I - PRODUCT IDENTIFICATION

ifacturer: DESOTO, INC.
BOX 5030
1700 S. MOUNT PROSPECT RD.
DES PLAINES IL 60017

Information Phone: 708/391-9(
Emergency Phone: 708/391-9000
CHEMTREC Phone: 1-800-424-9300

Product Class: SOLVENT REDUCER
Trade Name : REDUCER FOR HIGH SOLIDS GLOSS
Product Code : 020X463
C.A.S. Number: NA-MIXTURE
Prepared By : WILLIAM P. JOYCE
Title : CORPORATE SAFETY MANAGER

Hazard Ratings: none -> extreme
0 ---> 4

Health -
Fire -
Reactivity -

SECTION II - INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits ACGIH/TLV		OSHA/PEL		VP mm HG
METHYL ETHYL KETONE	78-93-3	53.	200	ppm	200	ppm	74.9
		STEL=	300		300		
ETHYL-3-ETHOXY PROPIONATE	763-69-6	10.	NE	ppm	NE	ppm	1.1
CYCLOHEXANONE	108-94-1	25.	S-25	ppm	S-25	ppm	2
N-BUTYL ACETATE	123-86-4	6.1	150	ppm	150	ppm	8.4
		STEL=	200		200		
KETONE	TRADE SECRET	5.9	NE	ppm	NE	ppm	3.5

*** ALL Ingredients in this product are listed in the T.S.C.A. Inventory.

IF AN INGREDIENT IS LISTED WITH A SINGLE ASTERISK, THE CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

PERCENT BY WEIGHT:
TO NEAREST 5% FOR SUBSTANCES 5-95%
<5.0% FOR SUBSTANCES 1.0-5.0%

S=SKIN; C=CEILING LIMIT
NE=NOT ESTABLISHED
NA=NOT APPLICABLE

SECTION III - PHYSICAL DATA

Boiling Range: 175 - 329 Deg. F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 100%

Vapor Density: Heavier than Air.
Liquid Density: Same as Water.
Wgt per gallon: 7.19 Pounds.
Spec. Gravity: 0.86

Appearance: CLEAR LIQUID, SOLVENT ODOR
V.O.C.: 862 GRAMS/LITER

DESOTO, INC. 000933

8010P 001369 F Prepared: 06/25

SECTION I - PRODUCT IDENTIFICATION 85570 96595

Part A lines C

Manufacturer: DESOTO, INC.
BOX 5030
1700 S. MOUNT PROSPECT RD.
DES PLAINES IL 60017

Information Phone: 708/391-900
Emergency Phone: 708/391-900
CHEMTREC Phone: 1-800-424-9

Hazard Ratings: none -> extreme
0 ---> 4
Health -
Fire -
Reactivity -

Product Class: POLYESTER
Trade Name : DESOTHANE 420 HS FAST DRY
Product Code : 821X830 (2)
C.A.S. Number: NA-MIXTURE
D.O.T. Hazard Class : FLAMMABLE LIQUID
Proper Shipping Name: PAINT

ID #: UN1263

SECTION II - INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits ACGIH/TLV		OSHA/PEL		V mm
NON-HAZARDOUS ADDITIVES, RESIN AND PIGMENTS	TRADE SECRET	33.	Undetermined				0
METHYL N-AMYL KETONE	110-43-0	12.	50	ppm	100	ppm	2
TITANIUM DIOXIDE	13463-67-7	44.	10	mg/M3	10	mg/M3	0
METHYL PROPYL KETONE	107-57-9	7.1	200	ppm	200	ppm	2
		STEL=	250		250		
STABILIZER	TRADE SECRET	2.0	Undetermined				0

*** ALL Ingredients in this product are listed in the T.S.C.A. Inventory.

IF AN INGREDIENT IS LISTED WITH A SINGLE ASTERISK, THE CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

PERCENT BY WEIGHT:
TO NEAREST 5% FOR SUBSTANCES 5-95%
<5.0% FOR SUBSTANCES 1.0-5.0%

S=SKIN; C=CEILING LIMIT
NE=NOT ESTABLISHED
NA=NOT APPLICABLE

SECTION III - PHYSICAL DATA

Boiling Range: 213 - 300 F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 37.93%

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Wate
Wgt per gallon: 12.47 Pounds.
Spec. Gravity: 1.50

Appearance: LIQUID, SOLVENT ODOR

SCREEN Model Inputs for Paint Booth AQUIS #3919 Bldg 1701

1. Material usage data for this booth identified the following four paint as having the greatest usage.

8010009704942	Water Based Primer - Green
801001X414742	Water Based Primer Black
801001X414614	Glossy Red Top Coat

2. Model Inputs

EMISSIONS RATE

The average density of coatings used in this booth is approximately 12 lb/gal. The approval order for this booth restricts the VOC content of coatings to 2.75 lb/gal. This being the case then the solids are 9.25 lb/gal.

The latest paint log shows a total of 670.53 gallons used in the past 12 months.

Based upon this information the VOC emission rate is estimated as follows;

670.53 gal/yr X 2.75 lb/gal X 454 gm/lb X 1 yr/52 wk X 1 wk/5 d X 1d/8 hr X 1 hr/ 60 min X 1 min/60 sec= **.11 gm/sec**

Based upon the above information the solids emission rate is estimated as follows;

670.53 gal/yr X 9.25 lb/gal X 454 gm/lb X 1 yr/52/wk X 1 wk/5 d X 1d/8 hr X 1 hr/60 min X 1 min/60 sec= **.38 gm/sec**

Assume 75% of all solids are deposited on part being painted and 25% is over spray;

.38 gm/sec X .25 = .095 gm/sec over spray

Assume that the filter system has a capture efficiency of 90% therefore the actual amount of solids emitted to the atmosphere is;

.095 gm/sec X .10 = .01 gm/sec

The screen model will be run twice using an emission rate of .11 gm/sec to estimate the VOC emissions and .01 gm/sec to estimate the emission of solids.

STACK HEIGHT

50 ft X 12 in/ft X .0254 m/in = 15.24 m

STACK DIAMETER

6 ea at 60 in (assume all emissions up single stack)

60 in X .0254 m/in = 1.52 m

STACK VELOCITY

110 ft/min X 12 in/ft X .0254 m/in X 1min/60 sec = .56 m/sec

STACK GAS TEMP

Assume 75° F which is approximately 24° C = 297° K

AMBIENT AIR TEMP

Use default 293°

DISTANCE TO FENCE LINE

300 ft X 12 in/ft X .0254 m/in = 86.4 m

COMPONENT EMISSIONS

Department of Air Quality personnel requested that component emissions be computed and compared against the TLV/100 for each. The following analysis is based upon the MSDS for each material identified above.

NSN 8010009704942 WATER BASED PRIMER GREEN
NSN 801001X414742 WATER BASED PRIMER BLACK

compound/% of tot	% of VOC	%of solid
2- Butoxyethanol/10	22	0
Titanium Dioxide/15	0	28
Ammonium Hydroxide/5	0	9
Diethylene Glycol Monobutyl Ether/2	4	0
Nonhazardous Organics/34	74	0
Non hazardous Solids/34	0	63

VOC at Fence line = 88.29 ug/m^3

2-Butoxyethanol (MW = 118.17)

TLV = 25 ppm, TLV/100 = .25 ppm
.22 X 88.29 ug/m^3 = 19.4 ug/m^3
19.4 ug X 1 u mole/ 118.17 ug = .164 u mole X 1mole/ 10^6 u mole =
1.64 X 10^{-7} X .0224 =4 X 10^{-9} = **4 ppb < 250 ppb**

Diethylene Glycol Monobutyl Ether

TLV not established, no reference found in literature.
.04X 88.29 ug/m^3 = **3.53 ug/m^3**

Nonhazardous Organics

TLV not established
.74 X 88.29 ug/m^3 = **65.33 ug/m^3**

Solids at fence line = 8.03 ug/m^3

Titanium Dioxide

TLV = 10 mg/m^3, TLV/100 = .1 mg/m^3
.28 X 8.03 ug/m^3 = **2.25 ug/m^3 < 100 ug/m^3**

Ammonium Hydroxide (MW = 35.06)

TLV = 25 ppm, TLV/100 = .25 ppm
.09 X 8.03 ug/m^3 = .72 ug/m^3
.72 ug X 1 u mole/35.06 ug = .02 u mole X 1 mole/10^6u moles=
2.1 X 10^{-8} X .0224 = 4.7 X 10^{-10}= **.47 ppb < 250 ppb**

Nonhazardous Solids

TLV not established
.63 X 8.03 ug/m^3= **5.06 ug/m^3**

NSN #801001X414614 Red Top Coat

compound/% of tot	% of VOC	% of solid
Toluene/4	13	0
Methyl-n-Amyl Ketone/22	79	0
Non-hazardous Solids/48	0	72
Naptha/1	1	0
1,3,5 Trimethyl Benzene/1	1	0
1,2,4 Trimethyl Benzene/2	2	0
Butyl Acetate/4	4	0
Hexamethyl Diisocyanate Polymer/17	0	26
Hexamethyl Diisocyanate/1	0	2

VOC emissions at fence = 88.29 ug/m^3

Toluene

TLV = 375 mg/m^3, TLV/100 = 3.75 mg/m^3
.13 X 88.29 ug/m^3 = **11.48 ug/m^3 < 3.75 mg/m^3**

Methyl-n-Amyl Ketone (MW = 114)

TLV = 50 ppm, TLV/100 = .5 ppm = 500 ppb
.79 X 88.29 ug/m^3 = 69.75 ug/m^3
69.75 ug X 1 u mole/ 114 ug = .61 u mole X 1 mole/10^6 u mole =
6.1 X 10^{-7} X .0224 = 1.4 X 10^{-8} = **14 ppb < 500 ppb**

Naptha (MW = 128)

TLV = 100 ppm, TLV/100 = 1 ppm
.01 X 88.29 ug/m^3 = .88 ug/m^3
.88 ug X 1 u mole/128 ug = .007 u mole X 1 mole/10^6 u mole =
7 X 10^{-9} X .0224 = 1.6 X 10^{-10} = **.16 ppb < 1 ppm**

1,3,5 Trimethyl Benzene (MW = 120)

TLV = 25 ppm, TLV/100 = .25 ppm
.03 X 88.29 ug/m^3 = 2.65 ug/m^3
2.65 ug X 1 u mole/120 ug = .022 u mole X 1 mole/10^6 u mole =
2.2 X 10^{-8} X .0224 = 4.9 X 10^{-10} = **.49 ppb < .25 ppm**

n-Butyl Acetate (116.18)

TLV = 150 ppm, TLV/100 = 1.5 ppm
.04 X 88.29 ug/m^3= 3.5 ug/m^3
3.5 ug X 1 u mole/116.18 ug = .03 u mole X 1 mole/10^6 u mole =
3 X 10^{-8} X .0224 = 6.75 X 10^{-10} = **.675 ppb < 1.5 ppm**

Solids emissions at fence line = 8.026 ug/m^3

Non Hazardous Solids

TLV not established
.72 X 8.026 ug/m^3 = **5.91 ug/m^3**

Hexamethyl Diisocyanate Polymer

TLV = 1.0 mg/m^3, TLV/100 = .01 mg/m^3 = 10u g/m^3
.26 X 8.206 ug/m^3 = **2.13 ug/m^3 < 10 ug/m^3**

Hexamethyl Diisocyanate (MW = 168.22)

TLV = 5 ppb, TLV/100 = .05 ppb
.02 X 8.026 ug/m^3 = .16 ug/m^3
.16 ug X 1 u mole/168.22 ug = .001 u mole X 1 mole/10^6 u mole =
1 X 10^{-9} X .0224 = 2.24 X 10^{-11} = **.022 ppb < .05 ppb**

10-26-93
15:12:26

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*** SCREEN-1.1 MODEL RUN ***
    VERSION DATED  88300 ***

bldg 1701 AQUIS 3919 BAQE-039-91, VOC

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =    POINT
   EMISSION RATE (G/S)      =    .1100
   STACK HEIGHT (M)         =    15.24
   STK INSIDE DIAM (M)      =     1.52
   STK EXIT VELOCITY (M/S)=        .63
   STK GAS EXIT TEMP (K)    =   297.00
   AMBIENT AIR TEMP (K)     =   293.00
   RECEPTOR HEIGHT (M)      =      .00
   IOPT (1=URB,2=RUR)       =     1
   BUILDING HEIGHT (M)      =      .00
   MIN HORIZ BLDG DIM (M) =        .00
   MAX HORIZ BLDG DIM (M) =        .00


BUOY. FLUX =     .05 M**4/S**3;  MOM. FLUX =     .23 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

    TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)    HT (M)   Y (M)   Z (M)  DWASH
 -------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    86.    88.29       4     1.0    1.1   320.0    15.0    13.6    12.0    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
 --------------    -----------   -------   -------
 SIMPLE TERRAIN      88.29          86.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
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10-26-93
15:15:55

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*** SCREEN-1.1 MODEL RUN ***
    VERSION DATED  88300 ***

Bldg 1701 AQUIS #3919 AO# BAQE-039-91, Other

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =    POINT
   EMISSION RATE (G/S)      =    .1000E-01
   STACK HEIGHT (M)         =    15.24
   STK INSIDE DIAM (M)      =     1.52
   STK EXIT VELOCITY (M/S)=       .63
   STK GAS EXIT TEMP (K)    =   297.00
   AMBIENT AIR TEMP (K)     =   293.00
   RECEPTOR HEIGHT (M)      =      .00
   IOPT (1=URB,2=RUR)       =     1
   BUILDING HEIGHT (M)      =      .00
   MIN HORIZ BLDG DIM (M) =        .00
   MAX HORIZ BLDG DIM (M) =        .00


BUOY. FLUX =     .05 M**4/S**3;  MOM. FLUX =     .23 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*   TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)    HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    86.   8.026        4     1.0    1.1   320.0    15.0    13.6    12.0    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       8.026          86.        0.


***************************************************
   REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
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State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

Bureau of Air Quality
1950 West North Temple
P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 536-4000
(801) 536-4099 FAX

BAQE-079-91

February 6, 1991

Newspaper Agency
Salt Lake Tribune
Legal Advertising Department
157 Regent Street
Salt Lake City, Utah 84111

Gentlemen:

This letter will confirm the authorization to publish the attached NOTICES in the Salt Lake Tribune and Deseret News on February 12, 1991.

Please mail the invoice and affidavit of publication to the Utah State Department of Health, Division of Environmental Health, Bureau of Air Quality, P.O. Box 16690, Salt Lake City, Utah 84110-0690.

Sincerely,

Joyce I. Wiswell

Joyce I. Wiswell
Office Technician
Bureau of Air Quality

Faxed 2-6-91 JIW

MRK:jiw

Enclosure

NOTICE

The following notices of intent to construct, submitted in accordance with Section 3.1, Utah Air Conservation Regulations, have been received for consideration by the Executive Secretary, Utah Air Conservation Committee:

1. **Mission Support, Inc.**

   Paint Booth

   Davis County CDS B

   Net increase of emissions from this source is calculated at the following values:

TSP	0.1	tons/yr
PM_{10}	0.1	tons/yr
SO_2	neg	tons/yr
NO_x	neg	tons/yr
CO	neg	tons/yr
VOC	13.2	tons/yr

2. **The Duriron Company, Inc.**

   Service Center Paint Booth

   Salt Lake County CDS B

   Net emissions from this new source are calculated at the following values:

TSP	0.03	tons/yr
PM_{10}	0.02	tons/yr
SO_2	neg	tons/yr
NO_x	neg	tons/yr
CO	neg	tons/yr
VOC	2.0	tons/yr

3. **Le Grand Johnson Construction Co.**

Cement Silo\Baghouse Control Unit

Mobile CDS B

Net increase of emissions from this source is calculated at the following values:

TSP	0.5	tons/yr
PM_{10}	0.4	tons/yr

4. **Thiokol Corporation, Strategic Operations**

Paint Booth

Box Elder County CDS A1

Net emissions from this source are calculated at the following values:

TSP	0.01	tons/yr
PM_{10}	0.01	tons/yr
VOC	0.8	tons/yr

5. **Hill Air Force Base**

Paint Booth

Davis County CDS A1

Net increase of emissions from this new source is calculated at the following values:

TSP	0.04	tons/yr
PM_{10}	0.03	tons/yr
SO_2	neg	tons/yr
NO_x	neg	tons/yr
CO	neg	tons/yr
VOC	0.19	tons/yr

6. **Glen's Excavating & Grading, Inc.**

Portable Concrete Batch Plant

Mobile CDS B

Net emissions from this new mobile source are calculated at the following values:

Particulate	4.71	...s/yr
PM_{10}	2.83	tons/yr
SO_2	0.94	tons/yr
NO_x	12.85	tons/yr
CO	3.03	tons/yr
VOC	1.33	tons/yr
Aldehydes	0.21	tons/yr

The engineering evaluations and air quality impact analyses have been completed and no adverse air quality impacts are expected. It is the intent to the Executive Secretary to approve the construction projects.

The construction proposals and estimates of the effect on local air quality are available for public inspection and comment at the Bureau of Air Quality, Utah State Department of Health, 1950 West North Temple, Salt Lake City, Utah 84116-0690. Written comments received by the Bureau, 1950 West North Temple, P.O. Box 16690, Salt Lake City, Utah 84116-0690, on or before March 21, 1991 will be considered in making the final decisions on the approval or disapproval of the proposed construction.

If anyone so requests within 15 days of publication of notice, a hearing will be held in the area of the proposed construction, installation, modification, relocation, or establishment.

Date of Notice: February 12, 1991

DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

/man H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

288 North 1460 West
P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6108

BAQE-723-88

December 1, 1988

Newspaper Agency
Salt Lake Tribune
Legal Advertising Department
157 Regent Street
Salt Lake City, Utah 84111

Gentlemen:

This letter will confirm the authorization to publish the attached NOTICE in the Salt Lake Tribune and Deseret News on December 12, 1988.

Please mail the invoice and affidavit of publication to the Utah State Department of Health, Division of Environmental Health, Bureau of Air Quality, P.O. Box 16690, Salt Lake City, Utah 84110-0690.

Sincerely,

David Kopta

Dave Kopta
Engineering Unit Manager
Bureau of Air Quality

DK/cc

Enclosure

NOTICE

The following notices of intent to construct, submitted in accordance with Section 3.1, Utah Air Conservation Regulations, have been received for consideration by the Executive Secretary, Utah Air Conservation Committee:

1. Superstition Crushing, Sand and Gravel Plant, Iron County
2. Paint Booth in Building 1251, Department of the Air Force, Davis County

The engineering evaluations and air quality impact analyses have been completed and no adverse air quality impacts are expected. No Prevention of Significant Deterioration (PSD) increment will be consumed by these proposals. It is the intent to the Executive Secretary to approve the construction projects.

The construction proposals and estimates of the effect on local air quality are available for public inspection and comment at the Bureau of Air Quality, Utah State Department of Health, 288 North 1460 West, Salt Lake City, Utah 84116-0690. Written comments received by the Bureau, 288 North 1460 West, P.O. Box 16690, Salt Lake City, Utah 84116-0690, on or before January 10, 1988 will be considered in making the final decision on the approval or disapproval of the proposed construction.

If anyone so requests within 15 days of publication of notice, a hearing will be held in the area of the proposed construction, installation, modification, relocation, or establishment.

Date of Notice: December 12, 1988