

8EHQ-1203-152118

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November 22, 2002

Document Processing Center (7407M)
EPA East – Room 6428 Attn: Section 8(e)
U. S. Environmental Protection Agency
Office of Pollution Prevention and Toxics
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

[]

Dear Sir:

EPA requested information on the uses of the test chemical that was the subject of the Section 8(e) submission made by [] and any other available information to assist in assessing the potential exposures. This information was made available to the EPA in the Premanufacture Notice []

For ease of reference, I have enclosed pages 7-11 plus continuation pages of this PMN to assist EPA with its evaluation of the exposures of this test substance. We consider this information to be confidential business information; therefore we are also enclosing a sanitized version of this information.

If you have any questions, please contact me at []

Sincerely,

[]
[]
[]

Attachments

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2002 DEC -3 AM 11:16

Part I - GENERAL INFORMATION - Continued

Section C - PRODUCTION, IMPORT, AND USE INFORMATION:

Mark (X) the "Confidential" box next to any item you claim as confidential.

1. **Production volume** - Estimate the maximum production volume during the first 12 months of production. Also estimate the maximum production volume for any consecutive 12-month period during the first three years of production. Estimates should be on 100% new chemical substance basis. For a Low Volume Exemption application, if you choose to have your notice reviewed at a lower production volume than 10,000 kg/yr, specify the volume and mark (x) in the binding box. If granted, you are bound to this volume

| Maximum first 12-month production (kg/yr) (100% new chemical substance basis) | Maximum 12-month production (kg/yr) (100% new chemical substance basis) | Confidential | Binding Option Mark (x) |
|--|--|--------------|-------------------------|
| | | | |

2. **Use Information** - You must make separate confidentiality claims for the description of the category of use, the percent of production volume devoted to each category, the formulation of the new substance, and other use information. Mark (X) the "Confidential" Box next to any item you claim as confidential.

- a. (1) - Describe each intended category of use of the new chemical substance by function and application..
- (2) - Mark (X) this column if entry column (1) is confidential business information (CBI).
- (3) - Indicate your willingness to have the information provided in column (1) binding.
- (4) - Estimate the percent of total production for the first three years devoted to each category of use.
- (5) - Mark (X) this column if entry in column (4) is confidential business information (CBI).
- (6) - Estimate the percent of the new substance as formulated in mixtures, suspensions, emulsions, solutions, or gels as manufactured for commercial purposes at sites under your control associated with each category of use.
- (7) - Mark (X) this column if entry in column (6) is confidential business information (CBI).
- (8) - Indicate % of product volume expected for the listed "use" sectors. Mark more than one box if appropriate. Mark (X) to indicate your willingness to have the use type provided in (8) binding.
- (9) - Mark (X) this column if entry(ies) in column (8) is (are) confidential business information (CBI).

Change noted

| Category of use (1) (by function and application i.e. a dispersive dye for finishing polyester fabric) | CBI (2) | Binding Option Mark (x) (3) | Production % (4) | CBI (5) | % in Formulation (6) | CBI (7) | % of substance expected per use (8) | | | | | CBI (9) |
|---|------------|--------------------------------|---------------------|------------|-------------------------|------------|--|----------|------------|------------|----------------|------------|
| | | | | | | | Site limited | Consumer | Industrial | Commercial | Binding Option | |
| component used to formulate lubricating oil additive packages used to blend finished oils | X | | 100 % | X | 10-80 % | X | | X | X | X | | X |
| | | | % | | % | | | | | | | |
| | | | % | | % | | | | | | | |
| | | | % | | % | | | | | | | |
| | | | % | | % | | | | | | | |
| | | | % | | % | | | | | | | |
| | | | % | | % | | | | | | | |

* If you have identified a "consumer" use, please provide on a continuation sheet a detailed description of the use(s) of this chemical substance in consumer products. In addition include estimates of the concentration of the new chemical substance as expected in consumer products and describe the chemical reactions by which this substance loses its identity in the consumer product.

Mark (X) this box if you attach a continuation sheet.

b. **Generic use description** - If you claim any category of use description in subsection 2a as confidential, enter a generic description of that category. Read the Instructions Manual for examples of generic use descriptions.

*Destructive Use
Substrate Additive*

Mark (X) this box if you attach a continuation sheet.

3. **Hazard Information** - Include in the notice a copy of reasonable facsimile of any hazard warning statement, label, material safety data sheet, or other information which will be provided to any person who is reasonably likely to be exposed to this substance regarding protective equipment or practices for the safe handling, transport, use, or disposal of the new substance. List in part III hazard information you include

Mark (X) this box if you attach hazard information.

Binding Option Mark (x)

X

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER

Mark (X) the "Confidential" box next to any item you claim as confidential

Complete section A for each type of manufacture, processing, or use operation involving the new chemical substance at industrial sites you control. Importers do not have to complete this section for operations outside the U.S.; however, you may still have reporting requirements if there are further industrial processing or use operations after import. You must describe these operations. See instructions manual

1. Operation description

a. Identity -- Enter the identity of the site at which the operation will occur

Name

Site address (number and street)

City, County, State, ZIP code

Confidential

If the same operation will occur at more than one site, enter the number of sites. Identify the additional sites on a continuation sheet, and if any of the sites have significantly different production rates or operations, include all the information requested in this section for those sites as attachments.

Mark (X) this box if you attach a continuation sheet.

b. Type --

Mark (X)

Manufacturing

Processing

Use

c. Amount and Duration -- Complete 1 or 2 as appropriate

| | Maximum kg/batch (100% new chemical substance) | Hours/batch | Batches/year | |
|---------------|--|-------------|--------------|---|
| 1. Batch | 32,000 | 15 | 100 | X |
| 2. Continuous | | | | |

d. Process description Mark (X) to indicate your willingness to have your process description binding.

- (1) Diagram the major unit operation steps and chemical conversions. Include interim storage and transport containers (specify- e.g 5 gallon pails, 55 gallon drum, rail car, tank truck, etc.).
- (2) Provide the identity, the approximate weight (by kg/day or kg/batch on a 100% new chemical substance basis), and entry point of all starting materials and feedstocks (including reactants, solvents, catalysts, etc.), and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch.).
- (3) Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance.

See Continuation Pages 27-31

Mark (X) this box if you attach a continuation sheet.

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER -- Continued

2. Occupational Exposure -- You must make separate confidentiality claims for the description of worker activity, physical form of the new chemical substance, number of works exposed, and duration of activity. Mark (X) the "Confidential" box next to any item you claim as confidential.
- (1) -- Describe the activities (i.e. bag dumping, tote filling, unloading drums, sampling, cleaning, etc.) in which workers may be exposed to the substance.
 - (2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).
 - (3) -- Describe any protective equipment and engineering controls used to protect workers.
 - (4) and (6) -- Indicate your willingness to have the information provided in column (3) or (5) binding.
 - (5) -- Indicate the physical form(s) of the new chemical substance (e.g., solid; crystal, granule, powder, or dust) and % new chemical substance (if part of a mixture) at the time of exposure.
 - (7) -- Mark (X) this column if entry in column (5) is confidential business information (CBI).
 - (8) -- Estimate the maximum number of workers involved in each activity for all sites combined.
 - (9) -- Mark (X) this column if entry in column (8) is confidential business information (CBI).
 - (10) and (11) -- Estimate the maximum duration of the activity for any worker in hours per day and days per year.
 - (12) -- Mark (X) this column if entries in columns (10) and (11) are confidential business information (CBI).

| Worker activity (i.e. bag dumping, filling drums) (1) | CBI (2) | Protective Equipment/ Engineering Controls (3) | Binding Option Mark (x) (4) | Physical forms(s) and % new substance (5) | Binding Option Mark (x) (6) | CBI (7) | # of Workers Exposed (8) | CBI (9) | Maximum duration Hrs/day (10) | duration Days/yr (11) | CBI (12) |
|---|------------|--|---|--|---|------------|-----------------------------------|------------|--|-----------------------------|-------------|
| A. Cleaning | X | Eye protection, gloves, and coveralls | X | Viscous liquid | X | X | 2 | X | 3 | 100 | X |
| B. Moving filter cake to incinerator | X | Eye protection, gloves, and coveralls | X | Pasty solid | X | X | 2 | X | 1 | 100 | X |
| C. Sampling / Analysis | X | Eye protection, gloves, and coveralls | X | Viscous liquid | X | X | 2 | X | 1 | 100 | X |
| D. Loading product (unloading) | X | Eye protection, gloves, and coveralls | X | Viscous liquid | X | X | 2 | X | 4 | 100 | X |
| E. Drumming | X | Eye protection, gloves, and coveralls | X | Viscous liquid | X | X | 2 | X | 8 | 30 | X |

Mark (X) this box if you attach a continuation sheet.

3. Environmental Release and Disposal -- You must make separate confidentiality claims for the release number and the amount of the new chemical substance released and other release and disposal information. Mark (X) the "Confidential" box next to each item you claim as confidential.
- (1) -- Enter the number of each release point identified in the process description, part II, section A, subsection 1d(3).
 - (2) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology (in kg/day or kg/batch).
 - (3) -- Mark (X) this column if entries in columns (1) and (2) are confidential business information (CBI).
 - (4) -- Identify the media (stack air, fugitive air (optional-see Instruction Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify)) to which the new substance will be released from that release point.
 - (5) -- a. Describe control technology, if any, and control efficiency that will be used to limit the release of the new substance to the environment. For releases disposed of on land, characterize the disposal method and state whether it is approved for disposal of RCRA hazardous waste. On a continuation sheet, for each site describe any additional disposal methods that will be used and whether the waste is subject to secondary or tertiary on-site treatment. b. Estimate the amount released to the environment after control technology (in kg/day).
 - (6) -- Mark (X) this column if entries in columns (4) and (5) are confidential business information (CBI).
 - (7) -- Identify the destination(s) of releases to water. Please supply NPDES (National Pollutant Discharge Elimination System) numbers for direct discharges or NPDES numbers of the POTW (Publicly Owned Treatment Works). Mark (X) if the POTW name or NPDES # is confidential business information (CBI).

| Release Number (1) | Amount of new substance released | | CBI (3) | Media of release e.g. water or (4) | Control technology and efficiency (you may wish to optionally attach efficiency data) | | | CBI (6) | |
|-----------------------|----------------------------------|-------------|------------|--|---|----------------------------|------|------------|---|
| | (2a) | (2b) | | | (5a) | Binding Mark (x) (5) | (5b) | | |
| 1 | | 50 kg/batch | X | Water | Chemical waste water system - Oil / Water separators, induced air flotation, sand filtration - water to deep well | | | 5 kg/batch | X |
| 2 | | 50 kg/batch | X | | Filters cleaned with diluent oil. Waste oil is recycled in filter precoat step for next batch filtration | | | 0 | X |
| 3 | | 50 kg/batch | X | Land | Filter cake is incinerated and the ash is then land filled | | | 0 | X |
| 4 | | 50 kg/batch | X | | Waste line flush oil is incinerated | | | 0 | X |

(7) Mark (X) the destination(s) of releases to water. POTW provide name(s) below. Navigable waterway Other - Specify provide NPDES # CBI

Mark (X) this box if you attach a continuation sheet.

Part II - HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE - Continued

Section B - INDUSTRIAL SITES CONTROLLED BY OTHERS

Complete section B for typical processing or use operations involving the new chemical substance at sites you do not control. Importers do not have to complete this section for operations outside the U.S.; however, you must report any processing or use activities after import. See the Instructions Manual. Complete a separate section B for each type of processing, or use operation involving the new chemical substance. If the same operation is performed at more than one site describe the typical operation common to these sites. Identify additional sites on a continuation sheet.

1. Operation Description - To claim information in this section as confidential, circle or bracket the specific information that you claim as confidential (1) - Diagram the major unit operation steps and chemical conversions, including interim storage and transport containers (specify - e.g. 5 gallon pails, 55 gallon drums, rail cars, tank trucks, etc). On the diagram, identify by letter and briefly describe each worker activity. (2) - Provide the identity, the approximate weight (by kg/day or kg/batch, on a 100% new chemical substance basis), and entry point of all feedstocks (including reactants, solvents and catalysts, etc) and all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch). (3) - Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance. (4) Please enter the # of sites (remember to identify the locations of these sites on a continuation sheet):

of sites 1

See Continuation Pages 32-33

Mark (X) this box if you attach a continuation sheet.

2. Worker Exposure/Environmental Release

- (1) - From the diagram above, provide the letter for each worker activity. Complete 2-8 for each worker activity described.
 - (2) - Estimate the number of workers exposed for all sites combined.
 - (4) - Estimate the typical duration of exposure per worker in (a) hours per day and (b) days per year.
 - (6) - Describe physical form of exposure and % new chemical substance (if in mixture), and any protective equipment and engineering controls, if any, used to protect workers.
 - (7) - Estimate the percent of the new substance as formulated when packaged or used as a final product.
 - (9) - From the process diagram above, enter the number of each release point. Complete 9-13 for each release point identified.
 - (10) - Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology to the environment (in kg/day or kg/batch).
 - (12) - Describe media of release i.e. stack air, fugitive air (optional-see Instructions Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify) and control technology, if any, that will be used to limit the release of the new substance to the environment.
 - (14) - Identify byproducts which may result from the operation.
- (3), (5), (8), (11), (13) and (15) - Mark (X) this column if any of the preceding entries are confidential business information (CBI).

| Letter of Activity (1) | # of Workers Exposed (2) | CBI (3) | Duration of Exposure | | CBI (5) | Protective Equip. / Engineering Controls/ Physical Form and % new substance (6) | % In Formulation (7) | CBI (8) | Release Number (9) | Amount of New Substance Released | | CBI (11) | Media of Release & Control Technology (12) | CBI (13) |
|------------------------|--------------------------|---------|----------------------|------|---------|---|----------------------|---------|--------------------|----------------------------------|-------------|----------|--|----------|
| | | | (4a) | (4b) | | | | | | (10a) | (10b) | | | |
| A | 2 | X | 0.5 | 75 | X | Eye protection, gloves, and coveralls | 10-20 | X | 2 | | 1 kg/day | X | Oily drains to Incinerator | X |
| C | 2 | X | 1 | 150 | X | Eye protection, gloves, and coveralls | 1-5 | X | | | | | | |
| D | 1 | X | 4 | 150 | X | Eye protection, gloves, and coveralls | 1-5 | X | 2 | | 0.25 kg/day | | Oily drains to Incinerator | X |
| E | 2 | X | 8 | 30 | X | Eye protection, gloves, and coveralls | 1-5 | X | 4 | | 0.25 kg/day | | Oily drains to Incinerator | X |

(14) - Byproducts:
None

Mark (X) this box if you attach a continuation sheet.

OPTIONAL POLLUTION PREVENTION INFORMATION

To claim information in this section as confidential circle or bracket the specific information that you claim as confidential.

In this section you may provide information not reported elsewhere in this form regarding your efforts to reduce or minimize potential risks associated with activities surrounding manufacturing, processing, use and disposal of the PMN substance. Please include new information pertinent to pollution prevention, including source reduction, recycling activities and safer processes or products available due to the new chemical substance. Source reduction includes the reduction in the amount or toxicity of chemical wastes by technological modification, process and procedure modification, product reformulation, raw materials substitution, and/or inventory control. Recycling refers to the reclamation of useful chemical components from wastes that would otherwise be treated or released as air emissions or water discharges, or land disposal. Descriptions of pollution prevention, source reduction and recycling should emphasize potential risk reduction subsequent to compliance with existing regulatory requirements and can be either quantitative or qualitative. The EPA is interested in the information to assess overall net reductions in toxicity or environmental releases and exposures, not the shifting of risks to other environmental media or non-environmental areas (e.g., occupational or consumer exposure). In addition, information on the relative cost or performance characteristics of the PMN substance to potential alternatives may be provided.

All information provided in this section will be taken into consideration during the review of this substance. See Instructions Manual and Pollution Prevention Guidance manual for guidance and examples.

Describe the expected net benefits, such as (1) an overall reduction in risk to human health or the environment; (2) a reduction in the volume manufactured; (3) a reduction in the generation of waste materials through recycling, source reduction or other means; (4) a reduction in potential toxicity or human exposure and/or environmental release; (5) an increase in product performance, a decrease in the cost of production and/or improved operation efficiency of the new chemical substance in comparison to existing chemical substances used in similar application; or (6) the extent to which the new chemical substance may be a substitute for an existing substance that poses a greater overall risk to human health or the environment.

This new mixed additive packages with improved oxidation and piston deposit control performance over previous phenate only detergent oils containing lubricant additive packages. This new carboxylate will increase the life of engines between overhalls thereby reducing oil consumption, air pollution, other possible environmental releases, and overall human exposure. : detergent will allow any to produce marine

Mark (X) this box if you attach a continuation sheet.

Page 26 Part I. C. 2. Continuation Sheet

Consumer Use Information

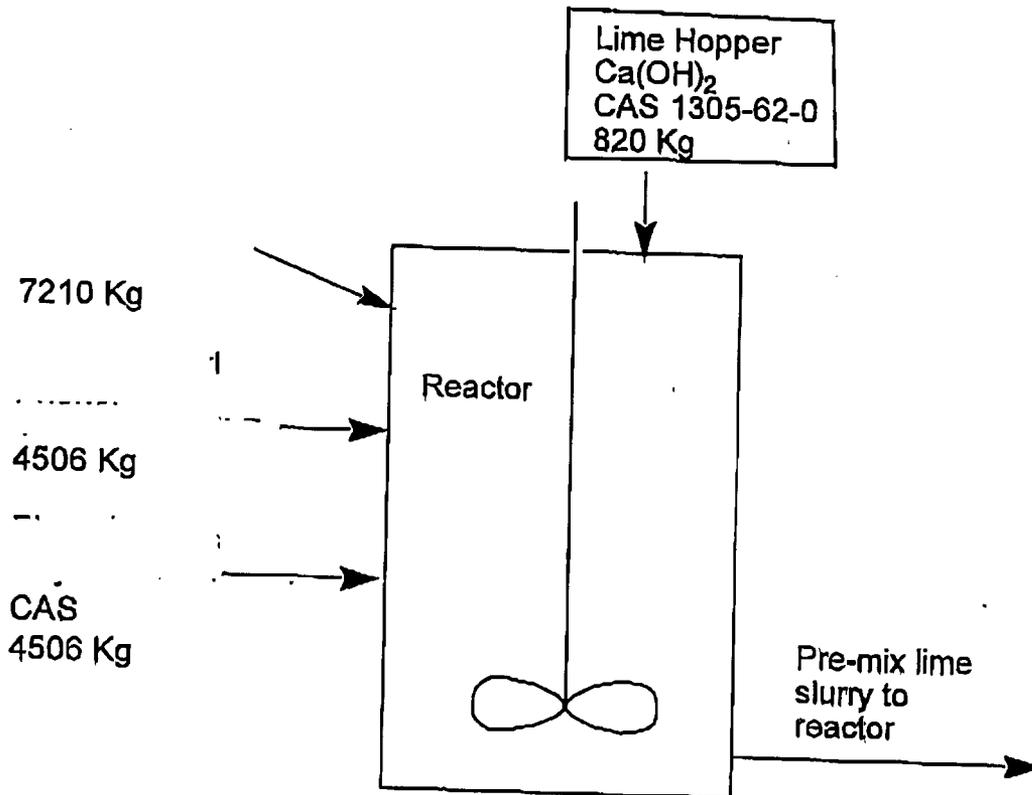
The mixed calcium salts of the _____ its described in this consolidated PMN are used to formulate marine diesel engine lubricating oils. The typical concentration in finished oil is 1-15%. _____ detergents are used to reduce deposits on pistons and in the engine crankcase and to control oxidation of the lubricant from high temperatures. These detergents are but one of the components used to formulate additive packages used to produce finished lubricants used in the global marine engine marketplace. _____ detergents are not substantially altered during use and do not decompose in the crankcase as they are very thermally stable. However, these materials are burned in the engine during oil consumption. Most of the ash left over from consumption during the combustion process will be returned to the sump as insolubles or emitted as particulate matter in the exhaust. These c _____ detergents will be attracted to and coat insoluble materials (soot particles, insoluble resins, etc.) and can be filtered out of the oil. Overtime, the predictable loss of detergency properties in these oils can be replaced as fresh oil is added to keep oil sump levels constant. Generally, used oil is not collected from this type of service; it is slowly consumed in the fuel combustion cycle. Fresh oil is consistently added during engine operation to counter balance losses due to such combustion. Unless the engine is brought in for maintenance or overhaul, this situation represents the typical use / consumption of lubricating oils containing _____

Page 27 Part II. A. 1. d. Continuation Sheet

Manufacturing and Importation Information

This product is currently being manufactured in [redacted] o. The process for preparing the mixed [redacted] starts with a slurry prepared from lime (calcium hydroxide) in a "premix" of the [redacted] and 2-ethylhexanol (see Preparation of Lime slurry Phase I- Neutralization figure below). A suitable temperature for ease of pumping is 150 F (65 C). The slurry is pumped into the reactor which is equipped with an agitator and a hot oil jacket, and heating is begun at that time.

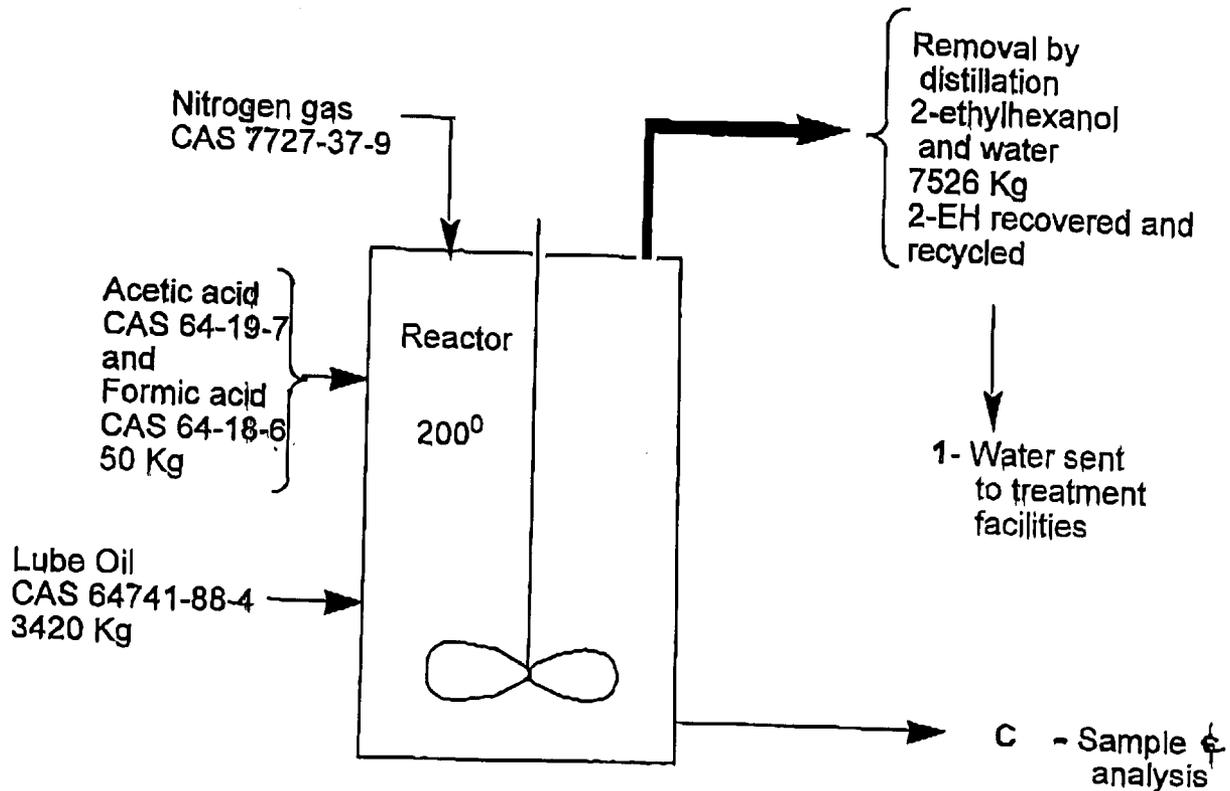
Preparation of Lime slurry
Phase I- Neutralization



Page 28 Part II. A. 1. d. Continuation Sheet

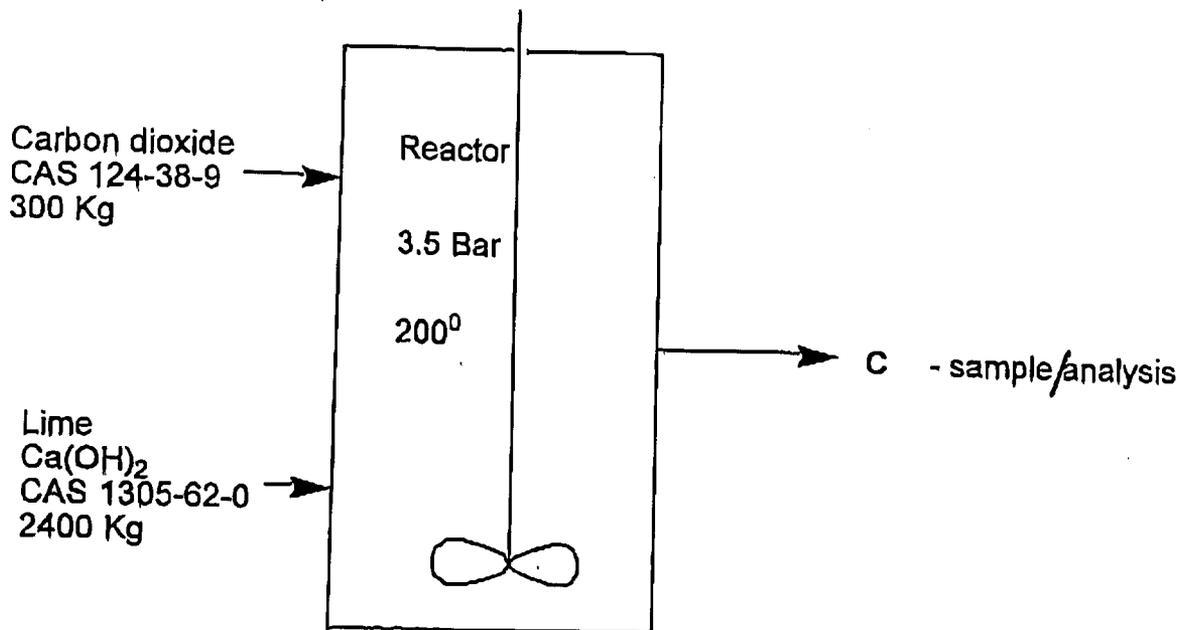
The acetic acid and formic acid is added at temperatures below 85 C. The reactor is then heated gradually to 200 C under a slight vacuum. The water of neutralization from the ... and lime is removed by the azeotropic distillation of 2-ethylhexanaol at about 185 C. The distillation of the azeotrope is continued for five hours, after which the vacuum is broken with nitrogen and a sample is taken for analysis of the ... ratio and the sediment percentage. The product is sampled from the reactor by one or two workers wearing eye protection, coveralls, and gloves. This sample is then analyzed in the laboratory by one or two workers to ensure the product meets the chemical specifications. If the sediment percentage is less than 2.4, then the reaction is continued. Lube oil is added, which brings the reactor temperature down to 190 C (see next page; Phase I- Neutralization Reaction figure).

Phase I- Neutralization Reaction



Page 29 Part II. A. 1. d. Continuation Sheet

Phase II- Carboxylation Reaction



The second phase of the reaction starts by adding additional lime and pressurizing the reactor with . The reactor is slowly heated to 200 C during seven hours. At the end of seven hours the reactor is decompressed and a sample is taken for analysis of the salicylate conversion ratio. The product is sampled from the reactor by one or two workers wearing eye protection, coveralls, and gloves. This sample is then analyzed in the laboratory by one or two workers to ensure the product meets the chemical specifications. A conversion to 30% salicylate is expected (see Phase II- n Reaction).

The detergent is blended with other lubricating oil additives at US manufacturing plants into additive packages via a computer controlled inline blending system. The inline blender allows rapid blending in a "just-in-time" delivery mode of the specific additive package which has been ordered. The components are pumped continuously from their storage tanks through computer controlled valves which meter the precise delivery of the additive components into a 12 inch pipe approximately 10-15 meters long. The products are pumped through mixing baffles to insure the package is properly blended. The additive packages are then pumped into rail cars or tank trucks for

Page 30 Part II. A. 1. d. Continuation Sheet

shipment to customers. The product is sampled from the tank truck or RR tank car by one or two workers wearing eye protection, coveralls, and gloves.

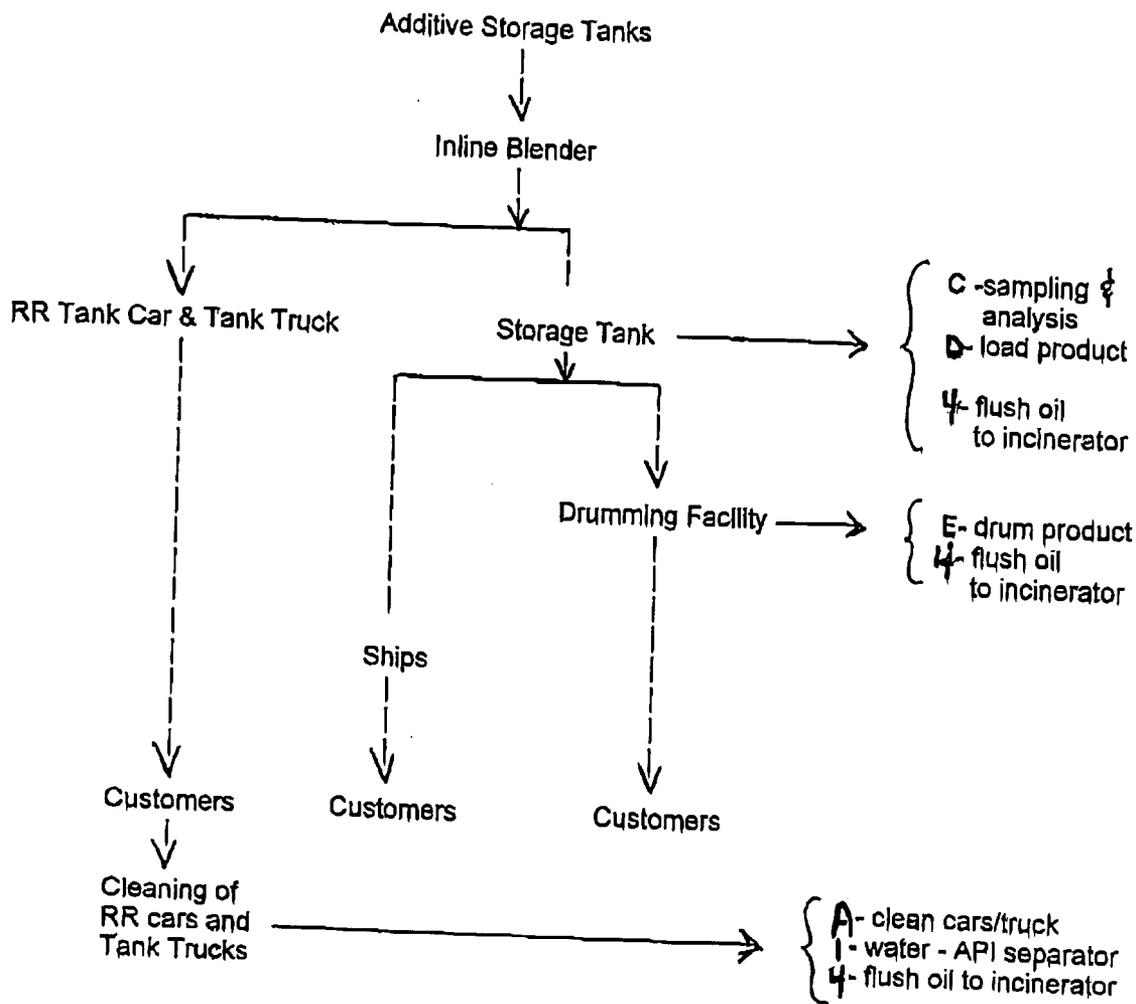
This sample is then analyzed in the laboratory by one or two workers to ensure that the product meets physical and chemical specifications. The analysis is done using automated equipment and the exposure to workers is minimal. For marine shipments, or a product which is drummed, the additive package is sent from the inline blender to a storage tank. The product is sampled from the storage tank by one or two workers wearing eye protection, coveralls, and gloves. This sample is then analyzed in the laboratory by one or two workers to ensure the product meets physical and chemical specifications.

The product is then pumped from the storage tanks to ships or to a drumming facility. Delivery of the additive package to ships is done by pumping the products through delivery lines to minimize worker exposure. The drumming facility uses automated weight scales to fill the drums and worker exposure occurs as the operator watches (from about 10 feet away) to ensure the drum filling mechanism properly enters the drums before the drum is filled. The bung's and labels are put on by the operators. All pipes, storage tanks, and delivery systems are cleaned by flushing the line with lube oil and pigging the lines to remove the residual oil. All pipes, storage tanks, and delivery systems are cleaned by flushing the lines with lube oil and then "pigging" the lines to remove residual oil. All of the flush oil is sent to the incinerator.

The () will constitute about 10-80% of a typical additive package. There will be approximately 10 lubricant additive packages prepared commercially which contain . Most of these packages will be used to blend crankcase engine oils for marine diesel engines.

Page 31 PartII A. 1. D Continuation Sheet

The additive packages will be blended in the United States and shipped to customers in North and South America (plus the Far East) for blending into finished lubricants. There are approximately 5 global customers who will buy our ten products to be blended into finished oils at approximately 20 different lubricating oil blending facilities in the United States. The typical concentration of th in the final finished lubricant will be 1-15%.



Page 32 Part II B. 1. Continuation Sheet

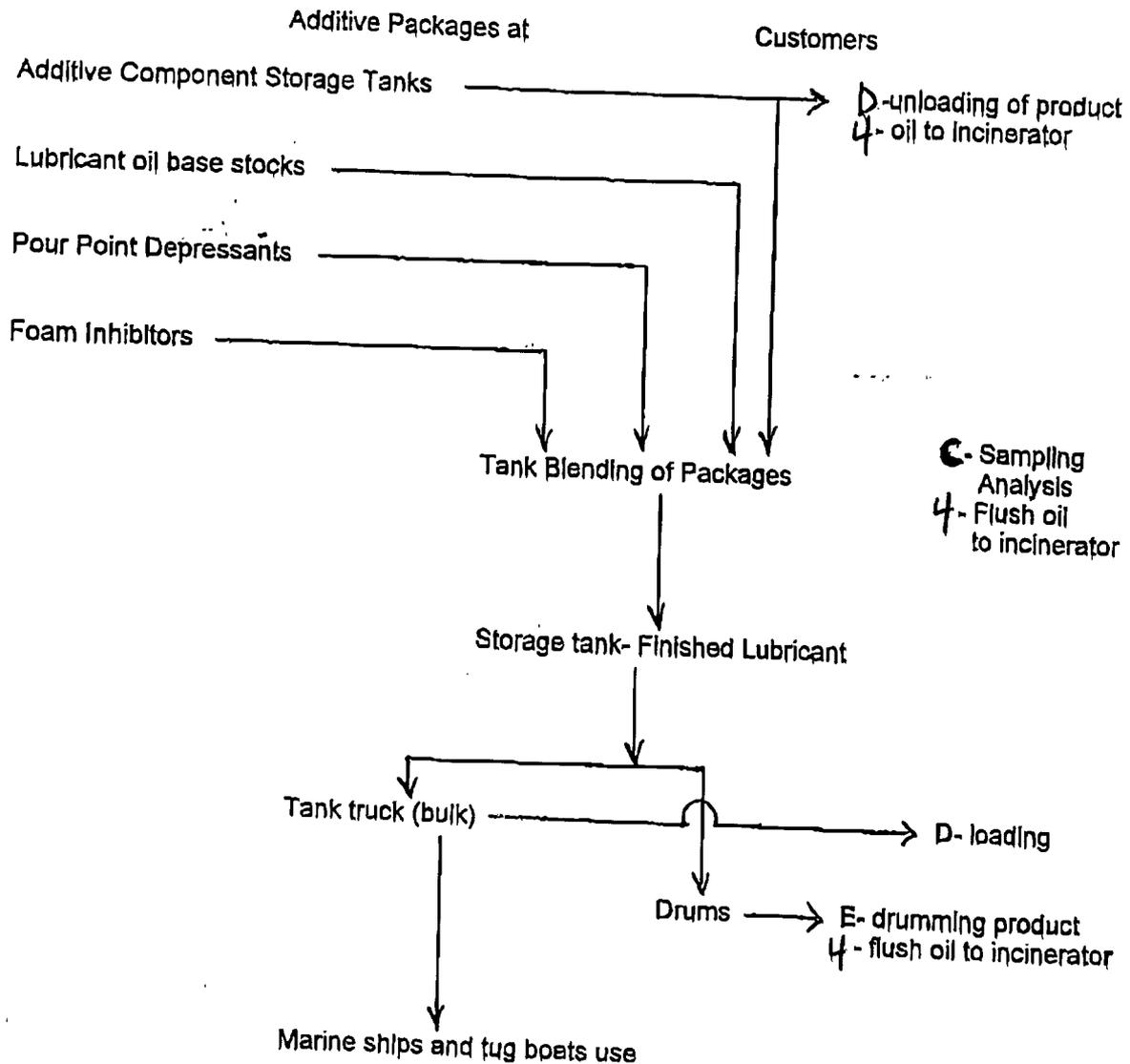
..... containing additive package products arrive at a typical U.S. customer's blending plant by rail car or tank truck. The additive package is transferred to a storage tank through a 4 inch hose. One worker, wearing gloves, coveralls and eye protection, spends 10 minutes fastening end of the hose to tank car. ISO 9002 procedures ensures no spillage due to loose connections between hose and tank car. One worker, wearing gloves, coveralls and eye protection, spends 10 minutes uncoupling the hose from the tank car. A special air back flush system prevents any spillage. The hose end is kept on an oily drain when not in use. The oily drain contents are sent to the incinerator. The rail cars are generally cleaned with steam. The waste water is sent to an on-site chemical waste water system that includes a water and oil separator, induced air floatation, sand filtration, and then the water is pumped into deep wells. The hydrocarbon portion is sent to an incinerator.

Finished oil blending is done by pumping the lubricating oil blend stocks and the additive package from their storage tanks through computer controlled valves that meter the precise delivery of the components into a blending tank. The finished lubricant is blended at about 140 degrees F. Pour point depressants and foam inhibitors are also added to help meet specifications. Exposure to workers can occur during sample removal for laboratory analysis. After blending, the product is sampled from the blend tank by one or two workers wearing eye protection, coveralls, and gloves to ensure the physical and chemical properties of the finished lubricant are meet. The finished lubricant analysis is done in a laboratory by one or two workers and takes only a few minutes. Cleaning of the blend tank is done with lube oil that is either recycled into future blends or is incinerated.

After blending, the finished marine products are packaged into 55 gallon drums and sold as bulk in tank trucks. Workers will be exposed to the finished lubricant during drum packaging at customer blending locations. The drumming facility uses automated weight scales to fill the drums and worker exposure occurs as the operator watches (from about 10 feet away) to ensure the drum filling mechanism properly enters the drums before the drum is filled. The bung's and labels are put on by the operators. The cleaning of the packaging lines is done with lube oil and this oil is typically recycled during future blending operations or incinerated. Additional exposure occurs during sample removal and laboratory analysis of the finished lubricant or during loading of the bulk lubricant in the tank trucks. The finished lubricant analysis in a laboratory is done by one or two workers and takes only a few minutes with minimal worker exposure. The bulk lubricant loading involves the connection of a 4 inch line to the truck and removal of the line after completion of the tank filing. The delivery lines are placed over oily drains which catch any spilled product.

Page 33 Part II B. 1. Continuation Sheet

We believe there are approximately 50 people in the United States who are involved in the transportation and drumming of finished lubricant that contain ... The finished lubricants will be sold primarily in drums or bulk to tug boat companies and owners of large ocean going diesel powered vessels. We believe the only potential ... exposure to the environment is by the improper disposal of the used oil.



can be detected by the use of calcium analysis down to about 10-20 parts per billion using Inductively Coupled Plasma Atomic Emission Spectroscopy or Atomic Absorption. Other ASTM Methods such as Total Base Number (ASTM 2896) can be used to measure the presence of the C