

8EHQ-0902-15041

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Bayer Corporation  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
Phone: 412 777-2000

August 28, 2002

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SUBJECT: 8EHQ-0102-15041A

Dear Mr. O'Bryan:

In response to your February 25, 2002 letter (attached) we are submitting the requested information.

Ionac Xama-7 (now known as Xama-7) is a commercial product used as crosslinker for coatings, inks and adhesives. The Material Safety Data Sheet of this product is also being provided covering risk management actions.

We hope this information is sufficient for your needs. Please contact me should further information be required.

Sincerely,

Janet M. Mostowy, Ph.D.  
VP, Product Safety & Regulatory Affairs  
412-777-3490  
412-777-7494 FAX



8EHQ-02-15041

Certified Mail: 7106 4575 1292 0338 1460



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*Attachment*  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, D.C. 20460

MAR 5 2002

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

February 25, 2002

Bayer Corporation  
Attn: Janet M. Mostowy, Ph.D.  
VP, Product Safety & Regulatory Affairs  
100 Bayer Road  
Pittsburgh, PA 15205

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2002 SEP 13 AM 11:09

SUBJECT: 8EHQ-0102-15041A

Dear TSCA 8(e) Submitter:

As part of EPA's responsibility to evaluate and publicize TSCA 8(e) submissions, the Office of Pollution Prevention and Toxics conducts preliminary screens of all 8(e)s and routinely requests additional information from submitters to complete this preliminary screen. Please provide the Agency with information on the uses of the test chemical and other available information to assist EPA in assessing potential exposures, as well as any voluntary risk management actions.

Enclosed is the first page of your submission and a copy of "Support Information for Confidentiality Claims". Please cite the assigned 8EHQ number and address your response to:

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 (or 1201 Constitution Avenue, NW for courier service)  
Washington, D.C. 20460-0001

Questions regarding this request should be directed to Mr. Terry O'Bryan of my staff at (202) 564-7656 or email [OBRYAN.TERRY@EPA.GOV](mailto:OBRYAN.TERRY@EPA.GOV)

Sincerely,

Richard H. Hefter, Chief  
High Production Volume Chemicals Branch

Enclosures

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2002 SEP 24 PM 12:54



MATERIAL SAFETY DATA SHEET

BAYER CORPORATION
PRODUCT SAFETY & REGULATORY AFFAIRS
100 Bayer Road
Pittsburgh, PA 15205-9741

TRANSPORTATION EMERGENCY
CALL CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

NON-TRANSPORTATION
BAYER EMERGENCY PHONE...: (412) 923-1800
BAYER INFORMATION PHONE.: (800) 662-2927

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME.....: XAMA 7
PRODUCT CODE.....: DA385
CHEMICAL FAMILY.....: Polyfunctional Aziridine

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME
/CAS NUMBER EXPOSURE LIMITS CONCENTRATION (%)

\*\*\*\*\* HAZARDOUS INGREDIENTS \*\*\*\*\*

Polyfunctional Aziridine
57116-45-7 OSHA : Not Established Essentially 100 %
ACGIH: Not Established

3. HAZARDS IDENTIFICATION:

\*\*\*\*\*
\* EMERGENCY OVERVIEW \*
\*
\* WARNING! Color: Amber; Form: Liquid; Clear; Odor: Slight \*
\* Amine Odor; Causes respiratory tract irritation; Harmful if \*
\* inhaled; May cause allergic skin reaction; Causes skin \*
\* irritation; Causes eye irritation; Harmful if swallowed; \*
\* Ground containers and equipment before transferring to avoid \*
\* static sparks; Use cold water spray to cool fire-exposed \*
\* containers to minimize the risk of rupture; Toxic \*
\* gases/fumes are given off during burning or thermal \*
\* decomposition. \*
\*\*\*\*\*

### 3. HAZARDS IDENTIFICATION (Continued)

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#### POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY.....: Inhalation; Skin Contact; Eye Contact; Ingestion

#### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION.....: Inhalation of vapors may cause severe irritation in the respiratory tract with coughing. Inhalation of acrylate vapors may also cause salivation, rapid breathing, headache, nausea, lethargy, pulmonary edema, and possibly convulsions.

CHRONIC INHALATION.....: None reported for this product as a whole. Based on component information repeated or prolonged contact with vapors from this product may result in adverse respiratory effects including cough, tightness of chest, and shortness of breath. Repeated or prolonged exposure to acrylate vapors may cause a cloudy swelling of the liver and kidneys.

ACUTE SKIN CONTACT.....: Contact of the product with the skin may cause irritation. Contact of this product with abraded skin may be severely irritating. Similar material in structure caused sensitization dermatitis in previously exposed individuals. Persons with pre-existing allergies may be predisposed to reactions from this product.

CHRONIC SKIN CONTACT.....: Repeated and/or prolonged contact may cause effects similar to those listed for acute effects.

ACUTE EYE CONTACT.....: Direct contact with this product can cause eye irritation. Symptoms may include reddening, tearing, and possibly blisters in severe exposure cases.

CHRONIC EYE CONTACT.....: Effects depend on concentration and duration of exposure. Repeated or prolonged contact may result in conjunctivitis or effects as in acute exposure.

ACUTE INGESTION.....: This product if ingested can cause gastrointestinal distress with symptoms of nausea, vomiting, or diarrhea. Ingestion of acrylates may cause central nervous system stimulation, severe respiratory difficulties, and collapse. Ingestion of ethyleneimine type compounds may cause cramps, vomiting, dizziness and kidney damage.

CHRONIC INGESTION.....: None reported for this product. Expected to be the same as effects of acute ingestion.

OTHER EFFECTS OF EXPOSURE.....: Chemicals (monomers used to produce this polyfunctional aziridine crosslinker) have been found to cause cancer in laboratory animals. Due to positive mutagenic tests and carcinogenic effects of lower molecular weight aziridine compounds this product should be handled with care. The potential for toxic effects (genotoxicity and mutagenicity) seems to be present in aziridine cross-linkers. The principal reason for this seems to be the relevant reactivity caused by the opening up of the aziridine ring during processing. Systemic availability (after oral, dermal and inhalatory exposure) seems to be considerably lower for this product than for the monomers used in its production. This can be inferred from a comparison of animal toxicity data. However, polyfunctional aziridine crosslinkers have shown pronounced genotoxic effects in all systems tested in vitro and in vivo so far and suggest a pattern at least qualitatively comparable with the effects exhibited by the

3. HAZARDS IDENTIFICATION (Continued)

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monomers used in their production.

CARCINOGENICITY.....: The major components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.  
NTP.....: Not Noted  
IARC.....: Not Noted  
OSHA.....: Not Noted  
OTHER.....: Note: This product contains less than 10 ppm ethylenimine residual. Ethylenimine is listed by IARC as a Class 2B-Carcinogen and is regulated by OSHA as a suspect carcinogen.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE.....: Based on component information this product may aggravate asthma, chronic respiratory disease (e.g. Bronchitis, Emphysema), eye disease, and skin disorders and allergies. Persons with pre-existing respiratory, eye, and skin conditions may be more susceptible to the effects of this product.

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4. FIRST AID MEASURES:  
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FIRST AID FOR EYES.....: Immediately flush eyes with large amounts of water for at least 15 minutes. Use fingers to insure that eyelids are separated and that the eye is being irrigated. Get medical attention immediately.  
FIRST AID FOR SKIN.....: Immediately flush affected area with water (cool/lukewarm) and soap, while removing all contaminated clothing and shoes. Get medical attention immediately. If burned cover the affected area with a sterile dressing or clean sheeting and transport immediately for medical care. DO NOT APPLY GREASES OR OINTMENTS. Wash clothing before wearing again. Destroy all leather goods.  
FIRST AID FOR INHALATION: Immediately remove to fresh air if breathing becomes difficult. If breathing has stopped administer artificial respiration. If breathing is still difficult administer oxygen (to be done by qualified medical personnel only). Consult a physician immediately.  
FIRST AID FOR INGESTION.: If ingested, consult a physician immediately. Administer two large glasses of water or milk for dilution. DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Should vomiting occur keep patient's head below hip level to prevent aspiration of fluid into the lungs.  
NOTE TO PHYSICIAN.....: Treat any ill effects symptomatically.

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5. FIRE FIGHTING MEASURES:  
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FLASH POINT.....: 212.0 F (100.0 C) Tagliabue Closed Cup (ASTM D-56)

5. FIRE FIGHTING MEASURES (Continued)

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FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL) (%): Not established  
LOWER EXPLOSIVE LIMIT (LEL) (%): Not established  
AUTO-IGNITION TEMPERATURE.....: 899.6 F (482 C)  
EXTINGUISHING MEDIA.....: Water; Carbon Dioxide; Dry Chemical; Foam;  
Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with self-contained breathing apparatus and full protective clothing (butyl rubber boots, gloves, and body suit) should be worn by fire-fighters. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Material supports combustion. During a fire, irritating and toxic gases such as carbon monoxide are generated by thermal decomposition or combustion. Do not spray fire directly. A solid stream of water directed into the hot burning liquid could cause frothing. Cool fire-exposed containers with water to prevent rupture.

UNUSUAL FIRE / EXPLOSION HAZARDS: Component vapors may be heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

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6. ACCIDENTAL RELEASE MEASURES:  
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SPILL OR LEAK PROCEDURES.....: Remove all sources of flames, heating elements, gas engines, etc. DO NOT touch spilled material. Emergency clean-up personnel should wear self-contained breathing apparatus and protective clothing (see personal protection section). If material is released or spilled, dam up to prevent spreading and contamination of surface waters, ground waters and drinking supplies. Notify local health authorities and other appropriate agencies if such contamination should occur. Spilled material should be contained and pumped into appropriate containers for recovery or disposal. Vermiculite absorbent should be spread over the spill area to absorb as much of the remaining product as possible. Scoop up solid absorbent for waste disposal. The spill area should then be washed down with soap and water to dilute and remove remaining traces of material. Ventilate area to remove the remaining vapors.

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7. HANDLING AND STORAGE:  
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STORAGE TEMPERATURE (MIN/MAX): Not established  
SHELF LIFE.....: Recommended - 24 months  
SPECIAL SENSITIVITY.....: Do not expose to acidic materials, high heat, direct sunlight, ultraviolet radiation, strong oxidizers, and protect from freezing.

7. HANDLING AND STORAGE (Continued)

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HANDLING/STORAGE PRECAUTIONS: Store (keep) away from acids and oxidizers. Store in a cool, dry, well ventilated storage area and in closed containers. Keep container dry. Ground all handling and transfer equipment to prevent the buildup of electrostatic sparks. Do not breathe vapors or mists if generated. Do not get in eyes, on skin or clothing. Use product only with adequate ventilation. Wash thoroughly after handling.

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8. PERSONAL PROTECTION:  
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EYE PROTECTION REQUIREMENTS.....: Liquid chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face-shield.

SKIN PROTECTION REQUIREMENTS.....: Permeation resistant gloves and clothing are recommended. Neoprene rubber gloves, cuffed butyl rubber gloves, nitrile rubber gloves. Wear long sleeve shirts and wear trousers when working with this product.

VENTILATION REQUIREMENTS.....: Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators is mandated (See RESPIRATOR REQUIREMENTS below). Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. If oven off-gases are not vented properly (i.e., they are released into the work area), it is possible to be exposed to airborne (propylene imine/ethylene imine) or other formulation ingredients.

RESPIRATOR REQUIREMENTS.....: A supplied air respirator with a full facepiece or hood that is operated in a positive pressure, pressure-demand, or continuous flow mode is mandatory during spray applications or whenever airborne concentrations of (propylene imine/ethylene imine) are unknown. An air purifying respirator with organic vapor cartridges may be worn in non-spray applications where airborne concentrations of (propylene imine/ethylene imine) are known to be above the PEL/TLV but less than 10X the PEL/TLV. Use fresh cartridges at the beginning of each work shift. Also, take into account other materials in the final formulated product. Observe OSHA regulations for respirator use (29 CFR 1910.134).

ADDITIONAL PROTECTIVE MEASURES.....: Safety showers and eye wash stations should be easily accessible to the work area. Wash at the end of each workshift and before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Do not eat, drink or use tobacco products in the work area when this product is present.

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9. PHYSICAL AND CHEMICAL PROPERTIES:  
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PHYSICAL FORM.....: Liquid  
APPEARANCE.....: Clear  
COLOR.....: Amber  
ODOR.....: Slight Amine Odor  
ODOR THRESHOLD.....: Not Established  
pH.....: Not established  
BOILING POINT.....: Not applicable  
MELTING/FREEZING POINT.....: Less than 14 F (10 C)  
VISCOSITY.....: Greater than 1200 cp @ 77 F (25 C)  
SOLUBILITY IN WATER.....: Soluble in cold water.  
SOLUBILITY (NON AQUEOUS)...: Miscible with acetone, methanol, chloroform and  
benzene. Insoluble in hexane.  
SPECIFIC GRAVITY.....: 1.185 at 68 F (20 C)  
BULK DENSITY.....: 9.889 lbs/gal  
VAPOR PRESSURE.....: 0.000021 mmHg @ 77 F (25 C)

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10. STABILITY AND REACTIVITY:  
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STABILITY.....: This is a stable material.  
HAZARDOUS POLYMERIZATION...: May occur; May occur if mixed with acidic  
materials.  
INCOMPATIBILITIES.....: Acidic materials, anhydrides and strong oxidizers.  
A reaction accompanied by large heat release occurs when the product is  
mixed with acids.  
INSTABILITY CONDITIONS.....: Contamination with acidic materials, heat, direct  
sunlight, ultraviolet radiation, strong oxidizing conditions, and freezing  
conditions.  
DECOMPOSITION TEMPERATURE...: Not established  
DECOMPOSITION PRODUCTS.....: By fire:- oxides of carbon, oxides of nitrogen and  
other aliphatic fragments which have not been determined.

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11. TOXICOLOGICAL INFORMATION:  
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ACUTE TOXICITY

INHALATION LC50.....: 338 mg/m<sup>3</sup>/4 hrs. (Rat)\*

MUTAGENICITY.....: Positive results were obtained in a battery of  
short-term, In-vitro genotoxicity assays. (Ames cho/hgprt, cell  
transformation). An "in vivo" Micronucleus Assay was performed in male mice  
(NMRI) by i.p. administration. The result was positive for chromosome  
aberrations.

Product Code: DA385  
Approval date: 03/26/2002

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Continued on next page

11. TOXICOLOGICAL INFORMATION (Continued)

\* Tests done at the Bayer AG Toxicology Laboratory (OECD Guideline No. 403)

12. ECOLOGICAL INFORMATION:

NO ECOLOGICAL INFORMATION AVAILABLE

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....: Waste must be incinerated or disposed of in compliance with federal, state or local environmental control regulations. If incinerated, toxic and corrosive combustion gases must be properly handled.

EMPTY CONTAINER PRECAUTIONS.: Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME.....: Polyfunctional Aziridine  
FREIGHT CLASS BULK.....: Chemicals, NOI, NMFC 60000  
FREIGHT CLASS PACKAGE.....: Chemicals, NOI, NMFC 60000  
PRODUCT LABEL.....: Product Label Established

DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION .....: Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

ICAO / IATA (AIR)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

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15. REGULATORY INFORMATION:  
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OSHA STATUS.....: This product is hazardous under the criteria of  
the Federal OSHA Hazard Communication Standard 29  
CFR 1910.1200.  
TSCA STATUS.....: On TSCA Inventory  
CERCLA REPORTABLE QUANTITY..: Ethyleneimine (CAS# 151-56-4) = 1 lb.  
SARA TITLE III:  
SECTION 302 EXTREMELY  
HAZARDOUS SUBSTANCES...: None  
SECTION 311/312  
HAZARD CATEGORIES.....: Immediate Health Hazard; Delayed Health Hazard;  
Reactive Hazard  
SECTION 313  
TOXIC CHEMICALS.....: None  
RCRA STATUS.....: If discarded in its purchased form, this product  
would not be a hazardous waste either by listing  
or by characteristic. However, under RCRA, it is  
the responsibility of the product user to  
determine at the time of disposal, whether a  
material containing the product or derived from  
the product should be classified as a hazardous  
waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other  
product specific health and safety data in other sections of the MSDS may also  
be applicable for state requirements. For details on your regulatory  
requirements you should contact the appropriate agency in your state.

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
Polyfunctional Aziridine 57116-45-7	Essentially 100 %	PA3, NJ4
Ethyleneimine 151-56-4	<10 ppm	CA1, MA

CA1 = Warning! This chemical is known to the State of California to cause  
cancer.

MA = Massachusetts Hazardous Substance List

NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%

PA3 = Pennsylvania Non-hazardous present at 3% or greater.

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16. OTHER INFORMATION:  
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HMIS RATINGS:                   Health    Flammability    Reactivity  
                                  3\*           1                   1  
                                  0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe  
                                  \*=Chronic Health Hazard

Bayer's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS ratings are provided by Bayer as a customer service.

REASON FOR ISSUE.....: Revising Product Label. Revising msds sections: 3, 9, and 11.

PREPARED BY.....: G. L. Copeland

APPROVED BY.....: H. E. Myer

APPROVAL DATE.....: 03/26/2002

SUPERSEDES DATE.....: 10/18/2001

MSDS NUMBER.....: 43472

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Product Code: DA385  
Approval date: 03/26/2002

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