

(HAZARDS IDENTIFICATION - Continued)

Potential Health Effects

Skin Contact: May cause skin irritation. May be harmful if absorbed through the skin. Prolonged or repeated exposure may cause allergic skin reaction in some people.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Overexposure may aggravate existing respiratory or skin conditions.

POTENTIAL ENVIRONMENTAL EFFECTS

None have been identified.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

(FIRST AID MEASURES - Continued)

Notes to Physicians

Treat symptomatically as required by the condition of the patient.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : Not Flammable
Autoignition : Not Available
Flammable limits in Air, % by Volume
LEL : None
UEL : None

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear full protective equipment. Shut off source of fuel, if possible and without risk. Cool tank/container with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS.
None known.

HAZARDOUS COMBUSTION PRODUCTS
None known.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Follow applicable Federal, State/Provincial and Local laws/regulations.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material. Dispose of in an approved container. Comply with Federal, State, and local regulations for reporting releases.

HANDLING AND STORAGE

Handling (Personnel)

Avoid contact with eyes, skin or clothing. Use with sufficient ventilation to keep employee exposure below recommended limits. Wash thoroughly after handling. Wash clothing after use.

Handling (Physical Aspects)

Keep container tightly closed.

Storage

Do Not Freeze.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

Personal Protective Equipment

EYE/FACE PROTECTION: Wear safety glasses or coverall chemical splash goggles.

RESPIRATORS: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Exposure Limits

Microplanar IMD2400

PEL (OSHA) : None Established

TLV (ACGIH) : None Established

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 212 F (100 C)
Vapor Pressure : Not Available
Vapor Density : Not Available
Evaporation Rate : Not Available
Solubility in Water : Not soluble
pH : ~4.5
Odor : None.

(PHYSICAL AND CHEMICAL PROPERTIES - Continued)

Color : Milky.
Specific Gravity : ~1.01
Form : Slurry.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Decomposition

None known.

Polymerization

Will not normally occur.

TOXICOLOGICAL INFORMATION

Animal Data

<<<Cerium Oxide

INHALATION

High concentrations may cause headache, nausea, or bronchitis.

EYE CONTACT

In vitro IDE score: 17.2/110, slightly irritating.

SKIN CONTACT

Irritation; dust may cause burning, tearing, and redness.

INGESTION

LD50, rat: >5000 mg/kg, not harmful

SUBCHRONIC TOXICITY

Inhalation study (rat, 6hr/day, 5days/week, 13 weeks):

NOAEL = 0.5 mg/l, the highest level tested

Pigment accumulation noted in the lungs, nasal cavity, bronchi, lymph nodes, trachea, liver and spleen, indication that normal clearance mechanisms were overwhelmed.

TARGET ORGANS

Respiratory tract and eyes.

<<<Surfactant

Oral LD50, Rat/adult: >2500 mg/kg

Skin LD50, Rabbit/adult: >3000 mg/kg

ECOLOGICAL INFORMATION

Ecotoxicological Information

No information is available.

<<<Surfactant
96 Hr static acute toxicity:
Daphnia Magna, LC50 168-280 mg/l
Bluegill, Sunfish, LC50 580-2000 mg/l

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

Incineration at a facility with proper Federal and State issued permits is the recommended method for disposal.

Container Disposal

Observe all label warnings. Empty containers may contain residue. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

Do not distribute, make available, or reuse empty containers except for storage and shipment of original product. Remove all product residue, and puncture or otherwise destroy empty containers before disposal. Consult 40 CFR, Parts 261 and 268 for guidance on disposal.

REGULATORY INFORMATION

U.S. Federal Regulations

This product complies with TSCA inventory reporting requirements.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 Hazard Categories: None

313: This product is not subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION AND LIABILITY ACT)

Reportable Quantity (RQ): None

(REGULATORY INFORMATION - Continued)

We recommend you contact local authorities to determine if there may be other local reporting requirements.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating	
Health	: 1
Flammability	: 0
Reactivity	: 0

Suggested HMIS ratings are based on characteristics of components where a specific product has not been tested. The component with the most significant hazard potential determines the rating for the mixture when the mixture is not tested.

Additional Information

This material is for industrial use and should only be used under the supervision of a technically qualified individual.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : DuPont Airproducts Nanomaterials L.L.C
MSDS Coordinator
Telephone : (757) 686-8663 OR (919) 248-5027

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS