



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

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BTX301-I(TM)
EPM00082 Revised 13-FEB-2009

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Product Use

CMP

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Air Products NanoMaterials L.L.C.
2441 W.Erie Dr.
Tempe
AZ
United States
85282

PHONE NUMBERS

Product Information : (800)441-7515(outside U.S. 302-774-1000)
Transport Emergency : (800)424-9300(outside U.S. 703-527-3887)
Medical Emergency : (800)441-3637(outside U.S. 302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
Alumina	1344-28-1	

Components (Remarks)

The specific wt% of the component(s) is withheld as proprietary.

HAZARDS IDENTIFICATION

Emergency Overview

Milky white suspension with no odor. Inhalation may cause cyanosis. May be harmful by ingestion. May cause eye irritation and drying of the skin.

(HAZARDS IDENTIFICATION - Continued)

Potential Health Effects

INHALATION

May cause respiratory tract irritation and cyanosis.

EYE CONTACT

May cause irritation.

SKIN CONTACT

May cause drying of the skin.

INGESTION

May cause dizziness, abdominal pain, vomiting, weakness, convulsions, and cyanosis.

TARGET ORGANS

Central nervous system, stomach, blood.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Overexposure may aggravate existing cardiovascular or respiratory conditions, blood disorders, or dermatitis.

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

In case of contact, immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. 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

(FIRST AID MEASURES - Continued)

If swallowed, do not induce vomiting. DO NOT GIVE ANYTHING TO DRINK. Call a physician immediately. Never give anything by mouth to an unconscious person.

Notes to Physicians

Treat symptomatically as required by the condition of the patient.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : None
Autoignition : None
Flammable limits in Air, % by Volume
LEL : None
UEL : None

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

This material is not flammable. Use normal firefighting procedures for the area.

UNUSUAL FIRE AND EXPLOSION HAZARDS.
No special precautions are necessary.

HAZARDOUS COMBUSTION PRODUCTS
Nitrogen oxides

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.

(ACCIDENTAL RELEASE MEASURES - Continued)

If material becomes dry, wet before removal.

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

Store in original container.

No specific requirements.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

Personal Protective Equipment

RESPIRATORY PROTECTION

No respiratory protection is required when this material is handled under proper ventilation, such as a wet bench or fume hood. If proper ventilation is not available, use a NIOSH approved full-face respirator with canisters or cartridges specifically approved for ammonia. If material becomes dry, add a dust/mist prefilter. Whenever cartridges or canister respirators are used, ensure the frequent changing of the filter element. Use a supplied air respirator when in doubt of the atmospheric concentration. Consult 29 CFR 1910.134 regarding use of respirators.

PROTECTIVE CLOTHING

Take all precautions to prevent skin contact. Wear Nitrile, Neoprene or Latex clothing and gloves, and chemical resistant boots when there is a probability of liquid contact.

EYE/FACE PROTECTION

Use safety glasses or chemical goggles.

Exposure Guidelines

Applicable Exposure Limits

Alumina
PEL (OSHA) : 15 mg/m³, total dust, 8 Hr. TWA
5 mg/m³, respirable dust, 8 Hr. TWA
AEL * (DuPont) : None Established

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 212 F (100 C)
Vapor Pressure : Not Available
Vapor Density : >1 (Air=1.0)
Evaporation Rate : Not Available
Solubility in Water : Insoluble Solids
pH : ~4
Odor : None.
Color : Milky, White.
Specific Gravity : 1.1 @ 25 C (77 F)
Form : Slurry.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None have been identified.

Decomposition

Hazardous gases or vapors can be released, including oxides of nitrogen.

Polymerization

Will not normally occur.

TOXICOLOGICAL INFORMATION

Animal Data

No data are available for this product. Data for a component are listed below.

Data for Alumina

(TOXICOLOGICAL INFORMATION - Continued)

INHALATION

LC50, rat (4 hr): >1.89 mg/l (no deaths). Excessive exposure may cause cough, mucous production, and shortness of breath. Respiratory effects typically associated with inhalation of particulates and lung overload have occurred in animals.

EYE CONTACT

Dust may cause mechanical irritation, based on human experience.

SKIN CONTACT

May cause irritation with redness and pain, based on human experience.

INGESTION

No information available.

GENOTOXICITY

No information available.

TARGET ORGANS

Central nervous system, stomach, blood.

CHRONIC TOXICITY

Chronic exposure of workers to aluminum containing dusts or fumes has caused fibrosis, emphysema and pneumothorax.

ECOLOGICAL INFORMATION

Ecotoxicological Information

No data are available for this product. Data for the components are listed below

DATA FOR ALUMINA

Not expected to be harmful to aquatic organisms.

FATE

In soil and sediment, aluminum ion is complexed with other electron rich species such as fluoride, sulfate, and phosphate. In water, hydrated aluminum ions may undergo "hydrolysis" to form various hydroxyaluminum species, depending on pH. Alumina is very sparingly soluble in water between pH 6 and pH 8, so concentrations in most surface water are low. No atmospheric transformations are expected to occur.

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 hazardous 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 hazardous product residue, and puncture or otherwise destroy empty containers before disposal. Consult 40 CFR, Parts 261 and 268 for guidance on disposal.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO/IATA
Not Regulated.

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: Acute

313: This product contains which are subject to the report requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. See Composition/Information on Ingredients section of this msds.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION AND LIABILITY ACT)

Not reportable.

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

(REGULATORY INFORMATION - Continued)

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating	
Health	: 1
Flammability	: 0
Reactivity	: 0

Additional Information

Because the long-term human health effects from exposure to BTX301-I(TM) have not been fully evaluated, exposure should be kept to the lowest level possible.

This material is for research and development use. Use only 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 : MSDS COORDINATOR
Telephone : 757-686-8663 OR 919-248-5027

Indicates updated section.

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