

**Product: Boron Nitride Aerosol**

H = 2  
F = 4  
R = 0 \*\*

## MATERIAL SAFETY DATA SHEET

### SECTION I.: PRODUCT AND COMPANY IDENTIFICATION

EFFECTIVE DATE: March 6, 2009

PRODUCT NAME: **BORON NITRIDE AEROSOL**

HCODE: H101

MANUFACTURER: ZYP COATINGS, INC.  
P.O. BOX 2590/120 VALLEY COURT  
OAK RIDGE, TN 37831/37830

MANUFACTURER PHONE: (865) 482-5717 (8:30 AM- 5 PM)  
FAX PHONE: (865) 482-1281

For any chemical emergency, call Chem-Tel: 800-255-3924; outside the U.S., call COLLECT 813-248-0585

### SECTION II.: COMPOSITION/INFORMATION ON INGREDIENTS

(SEE SECTION VIII FOR EXPOSURE GUIDELINES)

COMPONENT	CAS NUMBER	% BY WEIGHT
Boron Nitride	10043-11-5	15-20
Ethanol	64-17-5	15-20
2-Propanone	67-64-1	30-35
Propane	74-98-6	10-15
Butane	106-97-8	10-15

### SECTION III.: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

A white, flammable, solvent-base paint of boron nitride packaged in an aerosol spray canister using a compressed flammable gas propellant. Contents under pressure. Do not store in sunlight or heat over 120 F. Do not spray into open flame or hot surfaces. High temperatures may cause bursting. Do not puncture or incinerate. Keep out of reach of children. Dried paint is slippery and may cause falls if walked on.

#### POTENTIAL HEALTH EFFECTS

PRIMARY ROUTES OF EXPOSURE: Inhalation, contact to eyes and skin.

TARGET ORGANS: Eyes, skin and respiratory system

EYE: Redness, burning, tearing or swelling. Irritation will occur.

SKIN CONTACT: Prolonged/repeated contact with skin may cause redness, irritation, burning, drying or cracking.

INGESTION: Unlikely due to being in aerosol form but in rare cases ingestion may cause irritation to membranes of the mouth, throat and gastrointestinal tract. Vomiting and cramps may occur.

INHALATION: ANESTHETIC. Irritation to respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or death.

ACUTE EFFECTS: See section above for eye contact, skin contact, ingestion and inhalation.

CHRONIC EFFECTS: Excessive inhalation of dust above TLV of dried material over long periods of time may cause industrial bronchitis, reduced breathing capacity and lead to increased susceptibility to lung disease.

SPECIAL TOXIC EFFECTS: Product considered a "nuisance" dust. Excessive airborne concentrations of nuisance dusts may seriously reduce visibility, cause unpleasant deposits in the eyes, ears and nasal passages and cause irritation to skin or mucous membranes by chemical or mechanical action. Asthma and chronic respiratory conditions may be aggravated by exposure to this product.

Boron nitride is physiologically inert and considered a "nuisance" dust. Other boron compounds may be highly toxic and considered poisonous. Free boron will not be liberated under normal operating conditions or thermal decomposition of boron nitride. Exposure to boron nitride will not result in boron poisoning.

CARCINOGENICITY: Not carcinogenic

## **SECTION IV.: FIRST AID MEASURES**

EYES: Flush eyes, including under the eyelids, with large amounts of water. If irritation persists, seek medical attention.

SKIN: Wash thoroughly with mild soap and water.

INGESTION: In the unlikely event of swallowing, drink 1 to 2 glasses of water to dilute. Do not induce vomiting. Consult physician immediately.

INHALATION: Remove from exposure. Restore breathing, keep warm and quiet. Notify physician immediately. Never give anything by mouth to an unconscious person.

## **SECTION V.: FIRE FIGHTING MEASURES**

GENERAL OVERVIEW

Extremely flammable liquid packaged in an aerosol spray canister using a flammable gas propellant. Vapors are heavier than air and may travel to sources of ignition and flash back. Avoid high temperatures and static charges. Products of combustion will be created which are toxic when liquid or vapor contacts flame or red hot metal. See "emergency overview" page 1 for added information.

FLASH POINT: -156 F For propellant

METHOD USED: Open cup

FLAMMABLE LIMITS LEL: 1.9 - 2.1 PROPELLANT UFL: 8.5 - 9.5 PROPELLANT

EXTINGUISHING MEDIA: Water spray or fog. "Alcohol" foam, dry chemical, carbon dioxide.

UNUSUAL FIRE & EXPLOSIVE HAZARDS: Extremely flammable. Vapors are heavier than air and may travel to sources of ignition and flash back. Avoid high temperatures and static charges. Products of combustion will be created which are toxic when liquid or vapor contacts flame or red hot metal.

FIRE FIGHTING EQUIPMENT: Use water spray to cool fire exposed aerosol containers when feasible - aerosol cans can rupture violently from heat developed pressure.

ADDITIONAL NOTES:

## **SECTION VI.: ACCIDENTAL RELEASE MEASURE**

Spills from aerosol cans are unlikely and generally of small volume. Spill prevention is generally not a problem. In case of spill or rupture, avoid breathing vapors and ventilate area well. Remove all sources of ignition and use non-sparking equipment. Soak material up with inert absorbents. Allow absorbents to dry then incinerate. Do not incinerate aerosol cans.

## **SECTION VII.: HANDLING AND STORAGE**

Contents under pressure. Do not store in sunlight or heat over 120 F. Do not spray into open flame or hot surfaces. High temperatures may cause bursting. Do not puncture or incinerate. Keep out of reach of children. For warehouse storage, pallets and cases should be placed to avoid damage or rupture from material handling equipment. With use, spray aerosol carefully and cap after each use.

## **SECTION VIII.: EXPOSURE CONTROLS/PERSONAL PROTECTION**

INGREDIENT	CAS NUMBER	EXPOSURE LIMITS		
		TWA (ppm)	PEL (ppm)	TWA (mg/m3)
Boron Nitride	10043-11-5	---	---	5
Ethanol	64-17-5	1000	---	1900
2-Propane	67-64-1	750	1000	1780
Propane	74-98-6	800	1000	---
Butane	106-97-8	800	1000	---

The TLV:TWA calculated for dust generated from the dried product is 10 mg/m<sup>3</sup> for total dust and 5 mg/m<sup>3</sup> for respirable dust. The TLV:TWA for dust generated from this mixture is calculated using the general formula given in ACGIH adopted Appendix C, Subpart A2, threshold limit values for mixtures of mineral dust.

Eye protection : Side shielded safety glasses are recommended for any type of industrial handling.

SKIN PROTECTION: Wear protective clothing as needed. With aerosols skin exposure is not normally experienced.

RESPIRATORY PROTECTION: An appropriate NIOSH- approved respirator for organic vapor must be worn if exposure is likely to exceed the lowest TLV/PEL rated hazardous ingredient as shown in section II. If respirators are used, a program should be established to assure compliance with OSHA standard 29 CFR 1910.134.

VENTILATION RECOMMENDED: Good general ventilation (typically 10 air changes per hr) should be used. Ventilation rates should be matched to conditions. Local exhaust ventilation or an enclosed system may be needed to control air contamination below that of the lowest TLV/PER rated hazardous ingredient.

Eye wash and safety shower stations should always be provided for the health and safety of everyone in the workplace.

## **SECTION IX.: PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: White paint

ODOR: Alcohol/acetone

PHYSICAL STATE: Liquid in aerosol can

pH:N/A

VAPOR PRESSURE: Not determined

VAPOR DENSITY: Heavier than air

BOILING POINT: -25-31 F for PROPELLANT

FREEZING POINT: Not determined

SOLUBILITY IN WATER: NIL

SPECIFIC GRAVITY: Not determined

VOC CONTENT: 500-550 g/l (calculated, less exempt solvents)

VISCOSITY: Not determined

PERCENT VOLATILE: 80-90%

EVAPORATION RATE: Rapid

## **SECTION X.: STABILITY AND REACTIVITY**

STABILITY: Stable

INCOMPATIBILITY: Caustics and oxidizing materials

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon

CONDITIONS TO AVOID: Heat, sparks, flame, red hot metal.

HAZARD POLYMERIZATION: Will not occur.

## **SECTION XI.: TOXICOLOGICAL INFORMATION**

No available information

## **SECTION XII.: ECOLOGICAL INFORMATION**

NO AVAILABLE INFORMATION

## **SECTION XIII.: DISPOSAL CONSIDERATIONS**

Do not incinerate aerosol cans. Allow solvents on cleaning rags, papers, etc to evaporate, then dispose of in safety containers. Use and store to prevent accidental rupture of aerosol cans. Waste disposal - empty cans completely and puncture with **approved** devices made for this purpose. Cans may then be disposed in usual trash removal.

## **SECTION XIV.: TRANSPORTATION INFORMATION**

DOT CLASS:

49CFR: Consumer Commodity, ID 8000

IATA: Consumer Commodity, ID 8000

IMDG: Aerosols, UN 1950

Consult appropriate regulations

## **SECTION XV.: REGULATORY INFORMATION**

All substances contained in this product are listed in the toxic substance control act (TSCA) chemical substance inventory.

## **SECTION XVI.: OTHER INFORMATION**

Although reasonable care has been taken in the preparation of the information contained herein, the manufacturer extends no warranties, makes no representation and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

*\*\* Caution: HMIS ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS ratings are to be used only in conjunction with a fully implemented HMIS program by workers who have received appropriate HMIS training. HMIS is a registered trade and service mark of the NPCA. HMIS materials may be purchased exclusively from J.J. Keller (800) 327-6868.*