

MATERIAL SAFETY DATA SHEET



**SECTION 1 - PRODUCT AND COMPANY INFORMATION**

PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

**EMERGENCY PHONE NUMBERS (412) 434-4515 (U.S.)**  
(24 hours/day):

(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)  
0532-83889090 (China)

**TECHNICAL INFORMATION:** (740) 363-9610 (DELAWARE, OH) 8:00 a.m. - 5:00 p.m. EST  
**PRODUCT SAFETY/MSDS INFORMATION:** (412) 492-5555 7:00 a.m. - 4:30 p.m. EST

**Product ID:** DX533 (0808)  
**PRODUCT NAME:** ALUMINUM CLEANER  
**SYNONYMS:** None  
**ISSUE DATE:** 05/02/2006  
**EDITION NO.:** 3  
**CHEMICAL FAMILY:** MIXTURE

**EMERGENCY OVERVIEW:**

CAUSES IRREVERSIBLE EYE DAMAGE. MAY BE CORROSIVE. THIS PRODUCT CONTAINS A MATERIAL WHICH CAUSES SKIN BURNS. MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. VAPOR AND/OR SPRAY MIST HARMFUL IF INHALED. VAPOR IRRITATES EYES, NOSE, AND THROAT. VAPOR GENERATED AT ELEVATED TEMPERATURES IRRITATES EYES, NOSE AND THROAT. POISON. HARMFUL OR FATAL IF SWALLOWED. STABLE - HAZARDOUS REACTIONS POSSIBLE AT EXTREMELY HIGH TEMPERATURES/PRESSURES. This product is not expected to present any unusual hazards under fire or spill conditions. Read entire MSDS before use.

**SECTION 2 - COMPOSITION INFORMATION**

The following ingredient(s) marked with an "x" are considered hazardous under applicable U.S. OSHA and/or Canadian WHMIS regulations. If no ingredients are listed, then there are no U.S. OSHA and/or Canadian WHMIS hazardous ingredients in this product.

Material/ CAS Number	Percent	Hazardous	
PHOSPHORIC ACID 7664-38-2	10 - 30	X	
2-BUTOXY ETHANOL 111-76-2	7 - 13	X	
AMMONIUM BIFLUORIDE 1341-49-7	0.5-1.5	X	
(As Glycol ethers) 111-76-2	*	X	See Sections 8 and 15 for information.
(Ontario Glycol Ether) 111-76-2	*	X	See Sections 8 and 15 for information.

**SECTION 3 - HAZARDS IDENTIFICATION**

**ACUTE OVEREXPOSURE EFFECTS**

**EYE CONTACT:**

This product contains a material which causes irreversible eye damage. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

**SKIN CONTACT:**

May be corrosive. This product contains a material which causes skin burns. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

**SKIN ABSORPTION:**

May be harmful if absorbed through the skin.

**INHALATION:**

Vapor and/or spray mist harmful if inhaled. Vapor irritates eyes, nose, and throat. Vapor generated at elevated temperatures irritates eyes, nose and throat.

**INGESTION:**

Poison. Harmful or fatal if swallowed.

**SIGNS & SYMPTOMS OF OVEREXPOSURE:**

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Eye watering, headaches, nausea, dizziness and loss of coordination are indications that solvent levels are too high. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Not applicable.

**CHRONIC OVEREXPOSURE EFFECTS**

Avoid long-term and repeated contact.

Repeated exposure to vapors above recommended exposure limits (see Section 8) may cause irritation of the respiratory system and permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. Prolonged exposure to an ingredient(s) in this product may cause kidney and/or liver damage.

**Ingredient Specific Animal Data:**

The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures. See Section 11, of this MSDS for a detailed list of chronic health effects information available on individual ingredients in this product.

**SECTION 4 - FIRST AID MEASURES**

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available.

**EYE CONTACT:**

Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

**SKIN CONTACT:**

Run water over the affected area for 15 minutes while removing contaminated clothing. Apply generous quantities of fresh calcium gluconate gel to all areas. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

**INHALATION:**

Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

**INGESTION:**

Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do Not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

**COMPONENT-SPECIFIC NOTES TO PHYSICIAN:** Flush the affected area immediately with plenty of water for at least 15 minutes while removing contaminated clothing. Apply generous quantities of calcium gluconate gel to all affected areas. Get immediate medical attention.

**SECTION 5 - FIRE FIGHTING MEASURES**

**FLAMMABLE PROPERTIES**

**FLASHPOINT:** >400 Degrees F (>204 Degrees C)

**FLASHPOINT TEST METHOD:**

Pensky-Martens Closed Cup

**UEL:** Not Available.

**LEL:** Not Available.

**AUTOIGNITION TEMPERATURE:**

Not Available.

**EXTINGUISHING MEDIA:**

Use extinguishers appropriate for surrounding fire. Water spray may be ineffective. Water spray may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**PROTECTION OF FIREFIGHTERS:**

Fire-fighters should wear self-contained breathing apparatus and full protective clothing.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Neutralize spilled material with mild alkaline material. May produce hazardous decomposition products when exposed to extreme heat. Extreme heat includes, but is not limited to, flame cutting, brazing, and welding.

**SECTION 6 - ACCIDENTAL RELEASE MEASURE**

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:**

Provide maximum ventilation. Only personnel equipped with proper respiratory, skin, and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sand, vermiculite, or other noncombustible absorbent material and place in clean, empty containers for disposal. Only the spilled material and the absorbant should be placed in this container.

**SECTION 7 - HANDLING AND STORAGE**

**PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:**

Wash hands after use. Shower and eye wash station should be available in area of use. Store in a cool, dry, well-ventilated place. Containers should be grounded when pouring. Avoid free fall of liquids in excess of a few inches.

**STORAGE:**

Do not store above 120 degrees F. (48 degrees C.). Store in cool dry place.

**SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION**

**ENGINEERING CONTROLS:**

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients in Section 2 below the lowest suggested exposure limit, and LEL below stated limit, as appropriate.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYES:**

Wear chemical-type splash goggles and full face shield when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapors.

**SKIN/GLOVES:**

Wear protective clothing sufficient to cover exposed skin surfaces. For applications where skin contact is likely and impermeable clothing is necessary, select clothing constructed of: nitrile rubber. No specific permeation/degradation testing have been done on protective clothing for this product. Recommendations for skin protection are based on infrequent contact with this product. For frequent contact or total immersion, contact a manufacturer of protective clothing for appropriate chemical impervious equipment. The decision whether to clean or discard contaminated clothing should be based on the chemicals contaminating them. Some chemicals can cause skin irritation, sensitization or other health effects if the cleaning process does not remove all traces of them. Consult a safety professional to determine whether clothing contaminated with this product can be safely cleaned and reused.

**RESPIRATOR:**

Overexposure to vapors may be prevented by ensuring proper ventilation controls, vapor exhaust or fresh air entry. A NIOSH- approved air purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may also reduce exposure. Read the respirator manufacturer's instructions and literature carefully to determine the type of airborne contaminants against which the respirator is effective, its limitations, and how it is to be properly fitted and used. Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients in Section 2 below the lowest suggested exposure limit, and LEL below stated limit, as appropriate.

**GENERAL HYGIENE - ESTABLISHED EXPOSURE LIMITS**

If Threshold Limit Values (TLVs) have been established by ACGIH, OSHA, Ontario or PPG, they will be listed below. These limits are intended for use in the practice of industrial hygiene as guidelines or recommendations in the control of potential workplace health hazards. These limits are not a relative index of toxicity and should not be used by anyone without industrial hygiene training.

Material/ CAS Number	Percent	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
PHOSPHORIC ACID 7664-38-2	10 - 30	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2-BUTOXY ETHANOL 111-76-2	7 - 13	20 PPM	Not established	S- 25 ppm	Not established

Material/ CAS Number	Percent	Ontario TWA	Ontario STEL	PPG IPEL	PPG STEL
PHOSPHORIC ACID 7664-38-2	10 - 30	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	Not established	Not established
2-BUTOXY ETHANOL 111-76-2	7 - 13	S- 20 PPM	Not established	Not established	Not established

**Key:** ACGIH=American Conference of Governmental Industrial Hygienists; OSHA=Occupational Safety and Health Administration; TLV=Threshold Limit Value; TWA=Time Weighted Average; PEL=Permissible Exposure Limit; IPEL=Internal Permissible Exposure Limit; Ceiling=TLV or PEL Ceiling Limit; STEL=TLV or PEL Short-Term Exposure Limit; Skin= Skin Absorption Designation. [C- Ceiling Limit; S-Potential Skin Absorption; R-Respirable Dust]  
**Additional Information** Not applicable.

**SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES  
(FORMULA VALUES, NOT SALES SPECIFICATIONS)**

<b>SPECIFIC GRAVITY:</b>	1.073
<b>PHYSICAL STATE:</b>	Liquid
<b>Percent Solids:</b>	16.71
<b>Percent Volatile by Volume:</b>	90.510
<b>pH:</b>	Not available.
<b>ODOR THRESHOLD:</b>	Not available.
<b>Vapour Pressure:</b>	17.2 mmHg
<b>ODOR/APPEARANCE:</b>	Liquid with an odor characteristic of the chemical family and any solvents listed in Section 2.
<b>VAPOR DENSITY:</b>	HEAVIER THAN AIR
<b>Evaporation Rate:</b>	32
<b>BOILING POINT OR RANGE:</b>	212 - 340Degrees F
<b>Freezing Point or Range:</b>	Not Applicable.
<b>Melting Point or Range(°C):</b>	Not Applicable.
<b>Partition coefficient (n-octanol/water):</b>	Not Applicable.
<b>WEIGHT PER GALLON:</b>	8.94 (U.S.) / 10.7 (IMPERIAL)

**SECTION 10 - STABILITY AND REACTIVITY**

**STABILITY:**

This product is normally stable but may undergo hazardous reactions at extremely high temperatures and pressures.

**CONDITIONS TO AVOID:**

None Known.

**INCOMPATIBLE MATERIALS:**

Avoid contact with strong alkalis.

**HAZARDOUS POLYMERIZATION:**

None Known.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

- Oxides of nitrogen - Carbon monoxide - Carbon dioxide - Ammonia - Fluorinated products - Phosphorus pentoxide

**SECTION 11 - TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY**

Material/ CAS Number	Percent	ORAL LD50 (g/kg)	DERMAL LD50 (g/kg)	INHALATION LC50 (mg/l)
PHOSPHORIC ACID 7664-38-2	10 - 30	1.53 g/kg	2.74 g/kg	Not Available
2-BUTOXY ETHANOL 111-76-2	7 - 13	.47 g/kg	.22 g/kg	2.18 g/L. 4 hr.

**CHRONIC TOXICITY**

**Ingredient Target Organ/Chronic Effects:**

- Bone marrow and blood tissues - Blood - Kidney - Liver - Carcinogen - Brain - Central nervous system - Lung

**Mutagenicity Toxicity:**

This has not been tested for this product.

**Reproductive Toxicity:**

This has not been tested for this product.

**SUPPLEMENTAL HEALTH INFORMATION:**

Material/ CAS Number	Percent	Ingredient Specific Animal Data:
2-BUTOXY ETHANOL 111-76-2	7 - 13	This product contains an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissue. In a two-year NTP inhalation study, there was no significant increase in the incidence of any type of tumor in rats exposed to 2-butoxy ethanol at concentrations up to 125 ppm except a questionable trend in the incidence of adrenal gland tumors in female rats. When mice were exposed to concentrations of 62.5, 125, and 250 ppm, there was some evidence of carcinogenicity found in the liver of male mice and the forestomach of female mice at 250 ppm. This product contains an ingredient which has been shown to cause adverse reproductive effects in animals at doses which are also toxic to the mother.
AMMONIUM BIFLUORIDE 1341-49-7	0.5-1.5	An ingredient(s) in this product may adversely affect the blood and/or bloodforming tissues.

**SECTION 12 - ECOLOGICAL INFORMATION**

**POTENTIAL ENVIRONMENTAL EFFECTS**

**Ecotoxicity:** No Information Available.

**ENVIRONMENTAL FATE**

**Mobility:** No information available.  
**Biodegradation:** No information available.  
**Bioaccumulation:** No Information Available.

**PHYSICAL/CHEMICAL**

**Hydrolysis:** No information available.  
**Photolysis:** No information available.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Provide maximum ventilation, only personnel equipped with proper respiratory and skin and eye protection should be permitted in the area. Take up spilled material with sawdust, vermiculite, or other absorbent material and place in containers for disposal.

Waste material must be disposed of in accordance with federal, state, provincial and local environmental control regulations. Empty containers should be recycled by an appropriately licensed reconditioner/salvager or disposed of through a permitted waste management facility. Additional disposal information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

**SECTION 14 - TRANSPORTATION INFORMATION**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, NOS  
**NOS Technical Name:** Phosphoric Acid, Ammonium Bifluoride  
**Hazard Class:** 8  
**Subsidiary Class(es):** None  
**UN Number:** UN3264  
**Packing Group:** II

**USA - RQ Hazardous Substances:** Ammonium Bifluoride, Phosphoric Acid

**USA-RQ Hazardous Substance Threshold Ship Weight:** Ammonium Bifluoride>7245.65 Pounds, Phosphoric Acid>33333.37 Pounds

**Marine Pollutant Name:** None  
**USA Shipments Only - RQ Threshold Ship Weight:** This is the total weight of this product that must be shipped to exceed the RQ quantity.

**SECTION 15 - REGULATORY INFORMATION**

**INVENTORY STATUS**

**U.S. TSCA:** This product and/or all of its components are listed on the U.S. TSCA Inventory or is otherwise exempt from TSCA Inventory reporting requirements.

**FEDERAL REGULATIONS**

**US Regulations**

Material/ CAS Number	Percent	CERCLA HS - RQ (LBS)	SARA EHS- TPQ (LBS)	SARA 313
PHOSPHORIC ACID 7664-38-2	10 - 30	5000 lbs	Not Listed	Not Listed
2-BUTOXY ETHANOL 111-76-2	7 - 13	Not Listed	Not Listed	Not Listed
AMMONIUM BIFLUORIDE 1341-49-7	0.5-1.5	100 lbs	Not Listed	Not Listed
(As Glycol ethers) 111-76-2	*	Not Listed	Not Listed	Listed

**SARA 311/312**

Health (acute): Yes  
Health (chronic): Yes

Fire (flammable): No  
Pressure: No  
Reactivity: No

**WHMIS HAZARD CLASS:** - Class D, Division 2, Subdivision A - Class  
D, Division 2, Subdivision B - Class E - Class D, Division 1, Subdivision B

#### STATE/PROVINCIAL REGULATIONS

##### Additional Information

**Key:** IARC- International Agency on the Research of Cancer; ACGIH-  
American Conference of Governmental Industrial Hygienists; NTP-  
National Toxicology Program \*Denotes chemical as NTP Known  
Carcinogen; + Denotes NTP Possible Carcinogen; OSHA-  
Occupational Safety and Health Administration.

<b>SECTION 16 - OTHER INFORMATION</b>
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#### Hazard Rating Systems

**NFPA Rating:** 3 11

**HMS Rating:** 3\*11

**Rating System:** 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe,  
\*=Chronic Effects.

HMS=Hazardous Materials Identification System; NFPA=National Fire  
Protection Association;

Safe handling of this product requires that all of the information on the  
MSDS be evaluated for specific work environments and conditions of use.

**PREPARED BY:** Product Safety Department

**REASON FOR REVISION:** Date. Edition.

Updated MSDS  
format.

This Material Safety Data Sheet has been prepared in accordance with  
Canada's Workplace Hazardous Materials Information System (WHMIS)  
and the OSHA Hazard Communication Standard (29 CFR 1910.1200),  
the supplier notification requirements of SARA Title III, Section 313 and  
other applicable right-to-know regulations.

Additional environmental information is contained on the Environmental  
Data Sheet for this product, which can be obtained from your PPG  
representative.

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\*\*\* END OF MSDS \*\*\*