

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: (248) 689-0720 (TROY, MI) 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: CF700AW (0820-T0)

PRODUCT NAME: CHEMFOS 700AW

SYNONYMS: None

ISSUE DATE: 03/15/2006

EDITION NO.: 162

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. PROLONGED OR REPEATED CONTACT MAY CAUSE AN ALLERGIC SKIN REACTION. 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. DRIED FILM OF THIS PRODUCT MAY BE HARMFUL IF CHEWED OR SWALLOWED. 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 | |
|--|---------|-----------|--|
| MANGANESE NITRATE 10377-66-9 | 1 - 5 | X | |
| ZINC NITRATE 7779-88-6 | 1 - 5 | X | |
| PHOSPHORIC ACID 7664-38-2 | 1 - 5 | X | |
| ZINC PHOSPHATE 13598-37-3 | 1 - 5 | X | |
| NICKEL NITRATE 13138-45-9 | 1 - 5 | X | |
| AMMONIUM BIFLUORIDE 1341-49-7 | 1 - 5 | X | |
| (As Zinc Cmpnds) 7779-88-6 | * | X | See Sections 8 and 15 for information. |
| (As Nitrate Cmpnds) 7779-88-6 | * | X | See Sections 8 and 15 for information. |
| Water Dissociable Nitrate Compounds 7779-88-6 | * | X | See Sections 8 and 15 for information. |
| (As Nickel Soluble Cmpnds) 13138-45-9 | * | X | See Sections 8 and 15 for information. |
| (As Nickel Cmpnds) 13138-45-9 | * | X | See Sections 8 and 15 for information. |
| (As Nitrate Cmpnds) 13138-45-9 | * | X | See Sections 8 and 15 for information. |
| (As Zinc Cmpnds) 13598-37-3 | * | X | See Sections 8 and 15 for information. |
| (As Manganese Cmpnds) 10377-66-9 | * | X | See Sections 8 and 15 for information. |
| (As Nitrate Cmpnds) 10377-66-9 | * | 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. Prolonged or repeated contact may cause an allergic skin reaction.

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. Dried film of this product may be harmful if chewed or swallowed.

SIGNS & SYMPTOMS OF OVEREXPOSURE:

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.

Prolonged exposure to an ingredient(s) in this product may cause kidney and/or liver damage.

Ingredient Specific Animal Data: This product contains a nickel compound. IARC classifies nickel compounds as carcinogenic to humans. NTP concludes that metallic nickel and certain specific nickel compounds are carcinogenic. Manganese dust overexposure affects the central nervous system and may also cause blood and lung changes. These effects have mostly been observed in miners and steel mill workers. This product contains an ingredient that is listed by the ACGIH TLV committee as having a reproductive system effect that was considered when establishing its occupational exposure limit.

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: Not Applicable.

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.

PROTECTION OF FIREFIGHTERS:

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

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode or burst (due to the build-up of steam pressure) when exposed to extreme heat. This product may cause a fire if it dries on clothing, wood, or other combustible materials. Explosive mixtures may form by compounding with organic 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 absorbent should be placed in this container. Avoid contact with organic materials.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

Keep container closed when not in use. Store in a cool, dry, well-ventilated place.

STORAGE:

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 listed in Section 8 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

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:

Where vapors are present, an appropriate NIOSH-approved air purifying respirator with organic vapor cartridges or positive-pressure, air-supplied respirator is required. 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 listed in Section 2 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

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 | 1 - 5 | 1 mg/m ³ | 3 mg/m ³ | 1 mg/m ³ | 3 mg/m ³ |
| (As Nickel Soluble Cmpnds) 13138-45-9 | * | 0.1 mg/m ³ | Not established | 0.1 mg/m ³ | Not established |
| (As Manganese Cmpnds) 10377-66-9 | * | Not established | Not established | C- 5 MG/m ³ | Not established |

| Material/ CAS Number | Percent | Ontario TWA | Ontario STEL | PPG IPEL | PPG STEL |
|---|---------|-----------------------|---------------------|--------------------|--------------------|
| PHOSPHORIC ACID 7664-38-2 | 1 - 5 | 1 mg/m ³ | 3 mg/m ³ | Not established | Not established |
| (As Nickel Soluble Cmpnds) 13138-45-9 | * | 0.1 mg/m ³ | Not established | Not established | Not established |
| (As Manganese Cmpnds) 10377-66-9 | * | 5 mg/m ³ | 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)**

SPECIFIC GRAVITY: 1.309
PHYSICAL STATE: Liquid
Percent Solids: 32.71
Percent Volatile by Volume: 71.090
pH: 1.5
ODOR THRESHOLD: Not available.
Vapour Pressure: 17.5 mmHg
ODOR/APPEARANCE: Non-viscous liquid with an odor characteristic of the chemical family and any solvents listed in Section 2.
VAPOR DENSITY: HEAVIER THAN AIR
Evaporation Rate: 36
BOILING POINT OR RANGE: 212- 225Degrees F
Freezing Point or Range: Not Applicable.
Melting Point or Range(°C): Not Applicable.
Partition coefficient (n-octanol/water): Not Applicable.
WEIGHT PER GALLON: 10.91 (U.S.)/ 13.0 (IMPERIAL)

SECTION 10 - STABILITY AND REACTIVITY

STABILITY:
This product is normally stable and will not undergo hazardous reactions.
CONDITIONS TO AVOID:
None Known.
INCOMPATIBLE MATERIALS:
Avoid contact with organic materials. Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Oxides of nickel - Oxides of nitrogen - Oxides of zinc - 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 | 1 - 5 | 1.53 g/kg | 2.74 g/kg | Not Available |
| ZINC PHOSPHATE 13598-37-3 | 1 - 5 | 1.99 g/kg | Not Available | Not Available |

CHRONIC TOXICITY

Ingredient Target Organ/Chronic Effects:

- Lung - Neurotoxin - Carcinogen - Reproductive - Bone marrow and blood tissues - Blood - Kidney - Liver

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: |
|-------------------------------------|---------|---|
| NICKEL NITRATE 13138-45-9 | 1 - 5 | Possible reproductive hazard. An ingredient(s) in this product has adversely affected reproductive tissues in laboratory animals. |
| AMMONIUM BIFLUORIDE 1341-49-7 | 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.

Reactivity: No
WHMIS HAZARD CLASS: - Class D, Division 2, Subdivision A - Class D, Division 2, Subdivision B - Class E

STATE/PROVINCIAL REGULATIONS
CALIFORNIA PROP. 65: WARNING: This product contains a chemical known to the State of California to cause cancer.
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.

SECTION 16 - OTHER INFORMATION

Hazard Rating Systems
NFPA Rating: 3 00
HMIS Rating: 3*00

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

HMIS=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: Section 2 has been updated. Changes to this section may also result in changes in sections 8, 11 and/or 15. Section 14 has been updated. 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.
CF700AW 000003 (00391260.001)(03/14/06)
060313, 000, 0820

*** END OF MSDS ***

SECTION 14 - TRANSPORTATION INFORMATION

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

USA - RQ Hazardous Substances: Nickel Nitrate, Ammonium Bifluoride, Zinc Nitrate

USA-RQ Hazardous Substance Threshold Ship Weight: Nickel Nitrate>3558.36 Pounds, Ammonium Bifluoride>4586.7 Pounds, Zinc Nitrate>2

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 |
|--|---------|-------------------------|------------------------|------------|
| MANGANESE NITRATE 10377-66-9 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| ZINC NITRATE 7779-88-6 | 1 - 5 | 1000 lbs | Not Listed | Not Listed |
| PHOSPHORIC ACID 7664-38-2 | 1 - 5 | 5000 lbs | Not Listed | Not Listed |
| ZINC PHOSPHATE 13598-37-3 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| NICKEL NITRATE 13138-45-9 | 1 - 5 | 100 LBS | Not Listed | Not Listed |
| AMMONIUM BIFLUORIDE 1341-49-7 | 1 - 5 | 100 lbs | Not Listed | Not Listed |
| (As Zinc Cmpnds) 7779-88-6 | * | Not Listed | Not Listed | Listed |
| (As Nitrate Cmpnds) 7779-88-6 | * | Not Listed | Not Listed | Listed |
| Water Dissociable Nitrate Compounds 7779-88-6 | * | Not Listed | Not Listed | Listed |
| (As Nickel Cmpnds) 13138-45-9 | * | 1 lb | Not Listed | Listed |
| (As Nitrate Cmpnds) 13138-45-9 | * | Not Listed | Not Listed | Listed |
| (As Zinc Cmpnds) 13598-37-3 | * | Not Listed | Not Listed | Listed |
| (As Manganese Cmpnds) 10377-66-9 | * | Not Listed | Not Listed | Listed |
| (As Nitrate Cmpnds) 10377-66-9 | * | Not Listed | Not Listed | Listed |

SARA 311/312

Health (acute): Yes
Health (chronic): Yes
Fire (flammable): No
Pressure: No

4/12/08

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SECTION 1 - PRODUCT AND COMPANY INFORMATION

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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: (724) 274-7900 (SPRINGDALE, PA) 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: CP433 (0811)
PRODUCT NAME: POWERCRON GREEN PASTE
SYNONYMS: None
ISSUE DATE: 03/19/2008
EDITION NO.: 1
CHEMICAL FAMILY: PIGMENT DISPERSION

EMERGENCY OVERVIEW:
CAUSES SEVERE EYE IRRITATION. MAY CAUSE SKIN BURNS.
VAPOR AND/OR SPRAY MIST MAY BE HARMFUL IF
INHALED.HARMFUL OR FATAL IF SWALLOWED. 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.

Table with 4 columns: Material/CAS Number, Percent, Hazardous, and additional notes. Lists ingredients like COPPER PHTHALOCYANINE GREEN, ALUMINUM SILICATE, TITANIUM DIOXIDE, etc.

SECTION 3 - HAZARDS IDENTIFICATION

ACUTE OVEREXPOSURE EFFECTS
EYE CONTACT:
Causes severe eye irritation. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

SKIN CONTACT:
May cause skin burns. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.
SKIN ABSORPTION:
Skin absorption not expected to occur.
INHALATION:
Vapor and/or spray mist may be harmful if inhaled.
INGESTION:
Harmful or fatal if swallowed.
SIGNS & SYMPTOMS OF OVEREXPOSURE:
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.
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 a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. 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.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASHPOINT: >200 Degrees F (> 93 Degrees C)
FLASHPOINT TEST METHOD:
Pensky-Martens Closed Cup
UEL: Not Available.
LEL: Not Available.
AUTOIGNITION TEMPERATURE:
Not Available.
EXTINGUISHING MEDIA:
Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical or universal aqueous film forming foam) designed to extinguish NFPA Class IIIB combustible liquid fires.
PROTECTION OF FIREFIGHTERS:
Water spray may be ineffective. Water spray may be used to cool closed containers that are exposed to extreme heat. If water is used, fog nozzles are preferable. Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION 10 - STABILITY AND REACTIVITY

STABILITY:

This product is normally stable and will not undergo hazardous reactions.

CONDITIONS TO AVOID:

None Known.

INCOMPATIBLE MATERIALS:

Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide - Carbon dioxide - Oxides of nitrogen - Iron oxides - Oxides of aluminum - Lower molecular weight polymer fractions - Oxides of tin

Hydrolysis:
Photolysis:

No information available.
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 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

| Material/ CAS Number | Percent | ORAL LD50 (g/kg) | DERMAL LD50 (g/kg) | INHALATION LC50 (mg/l) |
|--------------------------------------|---------|---------------------|-----------------------|---------------------------|
| TITANIUM DIOXIDE 13463-67-7 | 1 - 5 | 10.00 g/kg | Not Available | Not Available |
| 1-BUTOXY-2- PROPANOL 5131-66-8 | 1 - 5 | 2.20 g/kg | 3.10 g/kg | Not Available |
| DIBUTYL TIN OXIDE 818-08-6 | 1 - 5 | .26 g/kg | 2.00 g/kg | Not Available |
| RED IRON OXIDE 1309-37-1 | 1 - 5 | 10.00 g/kg | Not Available | Not Available |

CHRONIC TOXICITY

Ingredient Target Organ/Chronic Effects:

- Carcinogen - Lung - Kidney - Liver - Teratogen

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: |
|-----------------------------------|---------|--|
| TITANIUM DIOXIDE 13463-67-7 | 1 - 5 | This product contains titanium dioxide. Animals inhaling massive quantities of titanium dioxide dust in a long-term study developed lung tumors. Studies with humans involved in manufacture of this pigment indicate no increased risk of cancer from exposure. |
| DIBUTYL TIN OXIDE 818-08-6 | 1 - 5 | Offspring of rats exposed orally to dibutyltin oxide during pregnancy had birth defects in the absence of maternal toxicity. Liver and kidney effects were noted in rats following repeated oral dosing. |

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

SECTION 14 - TRANSPORTATION INFORMATION

Proper Shipping Name: Paint- Non-Regulated Goods
NOS Technical Name: None
Hazard Class: None
Subsidiary Class(es): None
UN Number: None
Packing Group: None

USA - RQ Hazardous Substances: None
USA-RQ Hazardous Substance None
Threshold Ship Weight:
Marine Pollutant Name: None

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 |
|--|---------|-------------------------|-------------------------|------------|
| COPPER PHTHALOCYANINE GREEN 1328-53-6 | 5 - 10 | Not Listed | Not Listed | Not Listed |
| ALUMINUM SILICATE 1332-58-7 | 5 - 10 | Not Listed | Not Listed | Not Listed |
| TITANIUM DIOXIDE 13463-67-7 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| 1-BUTOXY-2- PROPANOL 5131-66-8 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| DIBUTYL TIN OXIDE 818-08-6 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| RED IRON OXIDE 1309-37-1 | 1 - 5 | Not Listed | Not Listed | Not Listed |
| (As Copper Cmpnds) 1328-53-6 | * | 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 D, Division 1, Subdivision B

7/16/07

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)
0532-3889090 (China)

TECHNICAL INFORMATION: (414) 764-6000 (OAK CREEK, WI) 8:00 a.m. - 5:00 p.m. Central
PRODUCT SAFETY/MSDS INFORMATION: (412) 492-5555 7:00 a.m. - 4:30 p.m. EST
Product ID: CR590 (0819)
PRODUCT NAME: POWERCRON RESIN
SYNONYMS: None
ISSUE DATE: 03/10/2005
EDITION NO.: 1
CHEMICAL FAMILY: Epoxy

EMERGENCY OVERVIEW:

CAUSES EYE IRRITATION. MAY CAUSE SLIGHT SKIN IRRITATION. VAPOR AND/OR SPRAY MIST MAY BE HARMFUL IF INHALED. MAY BE HARMFUL IF SWALLOWED. 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.

SECTION 3 - HAZARDS IDENTIFICATION

ACUTE OVEREXPOSURE EFFECTS

EYE CONTACT:

Causes eye irritation. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

SKIN CONTACT:

May cause slight skin irritation. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

SKIN ABSORPTION:

Skin absorption not expected to occur.

INHALATION:

Vapor and/or spray mist may be harmful if inhaled.

INGESTION:

May be harmful if swallowed.

SIGNS & SYMPTOMS OF OVEREXPOSURE:

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.

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. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary.

SKIN CONTACT:

Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may 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. Never give anything by mouth to an unconscious person. Contact a poison control center, emergency room or physician right away as further treatment may be necessary.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: >200 Degrees F (> 93 Degrees C)

FLASHPOINT TEST METHOD:

Pensky-Martens Closed Cup

UEL: Not Available.

LEL: Not Available.

AUTOIGNITION TEMPERATURE:

Not Available.

EXTINGUISHING MEDIA:

Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical or universal aqueous film forming foam) designed to extinguish NFPA Class IIIB combustible liquid fires.

PROTECTION OF FIREFIGHTERS:

Water spray may be ineffective. Water spray may be used to cool closed containers that are exposed to extreme heat. If water is used, fog nozzles are preferable. Firefighters should wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode or burst (due to the build-up of steam pressure) when exposed to extreme heat. 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:

If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

STORAGE:

Protect from freezing.

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 listed in Section 8 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

PERSONAL PROTECTIVE EQUIPMENT

EYES:

Wear safety glasses with side shields.

SKIN/GLOVES:

Wear protective clothing. Gloves should be constructed of: neoprene rubber or 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. Clean contaminated clothing and shoes.

RESPIRATOR:

Where ventilation is inadequate, use a NIOSH- approved air purifying respirator with the appropriate chemical cartridges or positive- pressure, air-supplied respirator. 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 listed in Section 2 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

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.

Key: OSHA=Occupational Safety and Health Administration;
PEL=Permissible Exposure Limit; Ceiling=PEL Ceiling Limit; STEL=PEL Short-Term Exposure Limit; Skin=OSHA Skin Designation.

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)

| | |
|------------------------------------|---|
| SPECIFIC GRAVITY: | 1.062 |
| PHYSICAL STATE: | Liquid |
| Percent Solids: | 35.60 |
| Percent Volatile by Volume: | 68.540 |
| pH: | Not available. |
| ODOR THRESHOLD: | Not available. |
| Vapour Pressure (mm Hg): | 17.4 mmHg |
| ODOR/APPEARANCE: | Viscous liquid with an odor characteristic of the chemical family and any solvents listed in Section 2. |
| VAPOR DENSITY: | HEAVIER THAN AIR |
| Evaporation Rate: | 36 |
| BOILING POINT OR RANGE: | 212 - 248Degrees F |
| Freezing Point or Range: | Not Applicable. |
| Melting Point or Range(°C): | Not Applicable. |

| | |
|---|-------------------------------|
| Octanol/Water Partition Coefficient: | Not Applicable. |
| WEIGHT PER GALLON: | 8.85 (U.S.) / 10.6 (IMPERIAL) |

SECTION 10 - STABILITY AND REACTIVITY

STABILITY:

This product is normally stable and will not undergo hazardous reactions.

CONDITIONS TO AVOID:

None Known.

INCOMPATIBLE MATERIALS:

Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide - Carbon dioxide - Traces of isocyanate - Oxides of nitrogen - Hydrogen cyanide - Lower molecular weight polymer fractions

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

CHRONIC TOXICITY

Mutagenicity:

This has not been tested for this product.

Reproductive:

This has not been tested for this product.

SUPPLEMENTAL HEALTH INFORMATION:

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: | Resin Solution- Non-Regulated Goods |
| NOS Technical Name: | None |
| Hazard Class: | None |
| Subsidiary Class(es): | None |
| UN Number: | None |

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

Product ID: CR590 (0819)
PRODUCT NAME: POWERCRON RESIN

Packing Group: None

USA - RQ Hazardous Substances: None
USA-RQ Hazardous Substance: None
Threshold Ship Weight:
Marine Pollutant Name: None

SECTION 15 - REGULATORY INFORMATION

INVENTORY STATUS

FEDERAL REGULATIONS

US Regulations

SARA 311/312

Health (acute): No
Health (chronic): No
Fire (flammable): No
Pressure: No
Reactivity: No

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.

SECTION 16 - OTHER INFORMATION

Hazard Rating Systems

NFPA Rating: 1 10

HMIS Rating: 1 10

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

HMIS=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.

CR590IK 000002 (00332884.001)(03/09/05)
050309, 000, 0819

*** END OF MSDS ***