Material Safety Data Sheet
The Dow Chemical Company

Product Name: ETHYL ACRYLATE 200 PPM PTZ

Issue Date: 06/28/2012
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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
ETHYL ACRYLATE 200 PPM PTZ

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Colorless
Physical State: Liquid.
Odor: Obnoxious
Hazards of product:

DANGER! Flammable liquid and vapor. Causes burns of the mouth and throat. Causes eye irritation. Prolonged exposure may cause skin burns. Harmful if absorbed through skin. May cause allergic skin reaction. Causes respiratory tract irritation. May cause skin irritation. May be harmful if inhaled. May be harmful if swallowed. Aspiration hazard. Can enter lungs and cause damage. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Evacuate area. Keep upwind of spill. Stay out of low areas. Warn public of downwind explosion hazard. Elevated temperatures can cause hazardous polymerization. Avoid temperatures above 38°C (100°F)

OSHA Hazard Communication Standard

®(TM)*Trademark

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause severe corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.
Skin Contact: Brief contact may cause moderate skin irritation with local redness. Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Skin Sensitization: Skin contact may cause an allergic skin reaction. Has demonstrated the potential for contact allergy in mice.
Inhalation: Easily attainable vapor concentrations may cause serious adverse effects, even death. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. May cause headache and nausea due to odor. The odor of ethyl acrylate is noticeable at very low concentrations.
Ingestion: Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.
Aspiration hazard: Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.
Effects of Repeated Exposure: In animals, effects have been reported on the following organs: Nasal tissue.
Cancer Information: An increased incidence of stomach tumors was seen in animals given daily oral doses of ethyl acrylate. Tumors were judged to result from irritation. Long-term studies by more relevant routes of exposure (skin, inhalation) were negative.

3. Composition Information

Component	CAS #	Amount
Ethyl acrylate	140-88-5	>= 99.8 - <= 100.0 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.
Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. See Section 10 for more specific information.

Environmental precautions: Material may float on water and any runoff may create an explosion or fire hazard if ignited. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Non-combustible material. Dirt. Sand. Large spills: Dike area to contain spill. Contain spilled material if possible. Ground and bond all containers and handling equipment. Collect in suitable and properly labeled containers. Pump with explosion-proof equipment. If available, use foam to smother or suppress. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Never use air pressure for transferring product. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically bond and ground all containers and equipment before transfer or use of material. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Store in a dry place. Store away from direct sunlight or ultraviolet light. Store away from incompatible materials. See STABILITY AND REACTIVITY section. Maintain inhibitor and dissolved oxygen level. Do not purge containers of this material with nitrogen. Recommended inhibitor level is: 10 to 20 ppm. Recommended oxygen level is: 5 to 8 vol. %. Uninhibited monomer vapors can polymerize and plug relief devices. See Section 10 for more specific information. When appropriate, unique handling information for containers can be found on the product label. Ask for a product brochure.

Shelf life: Use within 12 Months
Storage temperature: < 38 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Ethyl acrylate	ACGIH	TWA	5 ppm
	ACGIH	STEL	15 ppm

OSHA Table Z-1	PEL	100 mg/m3	25 ppm	SKIN

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.
Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Examples of acceptable glove barrier materials include: Butyl rubber. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Neoprene. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.
Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Colorless
Odor	Obnoxious
Odor Threshold	No test data available
pH	No test data available
Melting Point	Not applicable to liquids
Freezing Point	-71 °C (-96 °F) *Literature*
Boiling Point (760 mmHg)	100 °C (212 °F) *Literature* .
Flash Point - Closed Cup	9 °C (48 °F) *Literature*
Flash Point - Open Cup	20 °C (68 °F) *Tag Open Cup ASTM D1310*
Evaporation Rate (Butyl Acetate = 1)	3.3
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	**Lower**: 1.7 %(V) *Literature* **Upper**: 11.8 %(V) *Literature*

Vapor Pressure	28.8 mmHg @ 20 °C *Literature*
Vapor Density (air = 1)	3.5 *Literature*
Specific Gravity (H2O = 1)	No test data available
Solubility in water (by weight)	1.85 % @ 25 °C *Literature*
Partition coefficient, n-octanol/water (log Pow)	1.18 *Shake flask (OECD 107 Test)*
Autoignition Temperature	383 °C (721 °F) *Literature*
Decomposition Temperature	No test data available
Dynamic Viscosity	0.55 cps @ 25 °C *Literature*
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	0.923 g/cm3 *Literature*
Molecular Weight	100.12 g/mol
Henry's Law Constant (H)	2.54E-04 atm*m3/mole; 25 °C Estimated.

10. Stability and Reactivity

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures. Hygroscopic.

Possibility of hazardous reactions
Can occur. Elevated temperatures can cause hazardous polymerization. Maintain inhibitor and dissolved oxygen level. Do not purge containers of this material with nitrogen. Polymerization can be catalyzed by: Absence of air. Free radical initiators. High temperature. Peroxides. Presence of water can accelerate rate of polymerization. Uninhibited monomer vapors can polymerize and plug relief devices.

Conditions to Avoid: Avoid temperatures above 38°C (100°F) Exposure to elevated temperatures can cause product to decompose. Avoid static discharge. Avoid moisture. Do not blanket or purge with an inert gas to avoid depleting the oxygen concentration. Avoid direct sunlight or ultraviolet sources.
Inhibitor: Phenothiazine. Inhibitor Concentration (ppm): 5 - 250
Inhibitor: Methyl ether of hydroquinone. Inhibitor Concentration (ppm): 10 - 20

Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Azides. Ethers. Free radical initiators. Halides. Mercaptans. Mineral acids. Peroxides. Strong inorganic bases. Avoid contact with metals such as: Brass. Copper. Avoid unintended contact with: Activated carbon. Avoid contact with absorbent materials such as: Clay-based absorbents. Aluminum oxide. Silica gel. Avoid unintended contact with peroxides.

Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials.

11. Toxicological Information

Acute Toxicity
Ingestion
LD50, rat, male 1,120 mg/kg
Dermal
LD50, rat, male 3,049 mg/kg

Inhalation
LC50, 4 h, Vapor, rat < 9.137 mg/l

Eye damage/eye irritation
May cause severe eye irritation. May cause severe corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness. Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Sensitization
Skin
Skin contact may cause an allergic skin reaction. Has demonstrated the potential for contact allergy in mice.
Respiratory
No relevant data found.

Repeated Dose Toxicity
In animals, effects have been reported on the following organs: Nasal tissue.

Chronic Toxicity and Carcinogenicity
An increased incidence of stomach tumors was seen in animals given daily oral doses of ethyl acrylate. Tumors were judged to result from irritation. Long-term studies by more relevant routes of exposure (skin, inhalation) were negative. Workers exposed during 1933-1945 to very high vapor concentrations of ethyl acrylate and methyl methacrylate, and to volatile by-products of the ethyl acrylate/methyl methacrylate polymerization process, showed an increase in deaths due to colorectal cancer. Such increases were not observed in workers exposed after that time. Although suggestive, these findings do not establish a causal relationship between high level exposure to these acrylates and colorectal cancer.
Carcinogenicity Classifications:

Component	List	Classification
Ethyl acrylate	IARC	Possibly carcinogenic to humans.; 2B

Developmental Toxicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity
For similar material(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were predominantly negative.

12. Ecological Information

Toxicity

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through test, 96 h: 2.0 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, Daphnia magna (Water flea), flow-through test, 48 h, immobilization: 7.9 mg/l
Aquatic Plant Toxicity
EC50, Pseudokirchneriella subcapitata (green algae), static test, Growth inhibition (cell density reduction), 72 h: 4.5 mg/l
Toxicity to Micro-organisms
EC10; activated sludge, Respiration inhibition, 72 h: > 100 mg/l
Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.46 mg/l

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
80 - 90 %	28 d	OECD 310/ISO 14593	pass
> 60 %	11 d	OECD 302B Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.09E-11 cm3/s	0.984 d	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
18 %	27 %	50 %	

Theoretical Oxygen Demand: 1.92 mg/mg

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 1.18 Shake flask (OECD 107 Test)
Bioconcentration Factor (BCF): 2; Fish; Estimated.

Mobility in soil

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 12 Estimated.
Henry's Law Constant (H): 2.54E-04 atm*m3/mole; 25 °C Estimated.
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
87.5 %	12.4 %	0 %	0.01 %	0.01 %

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: ETHYL ACRYLATE, STABILIZED
Hazard Class: 3 **ID Number:** UN1917 **Packing Group:** PG II

DOT Bulk
Proper Shipping Name: ETHYL ACRYLATE, STABILIZED
Hazard Class: 3 **ID Number:** UN1917 **Packing Group:** PG II

IMDG
Proper Shipping Name: ETHYL ACRYLATE, STABILIZED
Hazard Class: 3 **ID Number:** UN1917 **Packing Group:** PG II
EMS Number: F-E,S-D
Marine pollutant.: No

ICAO/IATA
Proper Shipping Name: ETHYL ACRYLATE, STABILIZED
Hazard Class: 3 **ID Number:** UN1917 **Packing Group:** PG II
Cargo Packing Instruction: 364
Passenger Packing Instruction: 353
Additional Information

Reportable quantity: 1,000 lb – ETHYL ACRYLATE

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	Yes
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Ethyl acrylate	140-88-5	<= 100.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Ethyl acrylate	140-88-5	<= 100.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
The following product components are cited in the Pennsylvania Special Hazardous Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Ethyl acrylate	140-88-5	<= 100.0 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Component	CAS #	Amount
Ethyl acrylate	140-88-5	<= 100.0 %

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30
CEPA - Domestic Substances List (DSL)
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Product Literature
Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	3	3	1

Recommended Uses and Restrictions
Identified uses
Chemical intermediate.

Revision
Identification Number: 77936 / 1001 / Issue Date 06/28/2012 / Version: 2.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with

all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.