

## **Material Safety Data Sheet**

THE DOW CHEMICAL COMPANY\*

Product name: ADCOTE™ 40-51NEF Issue Date: 08/08/2014
Print Date: 10/15/2014

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: ADCOTE™ 40-51NEF

**COMPANY IDENTIFICATION** 

THE DOW CHEMICAL COMPANY\*
Agent for Rohm and Haas Chemicals LLC
100 INDEPENDENCE MALL WEST
PHILADELPHIA PA 19106-2399
UNITED STATES

Customer Information Number: 215-592-3000

SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER** 

**24-Hour Emergency Contact:** 1 800 424 9300 **Local Emergency Contact:** 989-636-4400

## 2. HAZARDS IDENTIFICATION

#### **Emergency Overview**

**Appearance** 

Physical state liquid
Color amber

**Odor** Ester Odor

Issue Date: 08/08/2014

**Hazard Summary WARNING!** 

FLAMMABLE.

IRRITATING TO RESPIRATORY SYSTEM.

CONTAINS SOLVENT(S) WHICH CAN CAUSE LIVER/KIDNEY

DAMAGE.

**BLOOD DISORDERS** 

INHALATION OF VAPOR OR MIST CAN CAUSE THE

FOLLOWING: **NAUSEA HEADACHE NARCOSIS** 

HARMFUL IF SWALLOWED.

#### **Potential Health Effects**

**Primary Routes of Entry:** Eye contact

Inhalation Skin contact

**Eyes:** The solvent(s) in this material can cause the following:

Irritation conjunctivitis

**Skin:** The solvent(s) in this material can cause the following:

slight irritation

defatting and drying of the skin which can lead to irritation and dermatitis

**Ingestion:** The solvent(s) in this material can cause the following:

narcosis Headache Nausea

Inhalation: Inhalation of solvent vapor or mist can cause the following:

irritation of nose, throat, and lungs

Headache Nausea narcosis

central nervous system (CNS) effects

Chronic Exposure: Prolonged or repeated overexposure to the solvent(s) in this material can cause

the following: heart damage kidney damage liver damage lung damage central nervous system (CNS) effects blood disorders

**Aggravated Medical Condition:** Eyes

Heart disease Respiratory disorders Kidney disorders Liver disorders Skin disorders

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Polymers, solvent based

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product is a mixture.

Component	CASRN	Concentration
		_
Ethyl acetate	141-78-6	55.0 - 57.0 %
Propyl acetate	109-60-4	13.0 - 15.0 %
Polyester resin(s)	Not Hazardous	12.0 - 14.0 %
Acrylic polymer(s)	Not hazardous	6.0 - 8.0 %
Talc	14807-96-6	3.0 - 5.0 %

#### 4. FIRST AID MEASURES

#### **Description of first aid measures**

**Inhalation:** Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Immediate medical attention is required.

**Skin contact:** Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Consult a physician. Wash contaminated clothing before re-use.

**Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Ingestion:** Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Drink 1 or 2 glasses of water. Call a physician immediately.

**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), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed Notes to physician: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

## 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Foam Carbon dioxide (CO2) Dry powder Water spray

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture Hazardous combustion products: no data available

**Unusual Fire and Explosion Hazards:** Vapors can travel to a source of ignition and flash back. Heated material can form flammable or explosive vapors with air. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.

## Advice for firefighters

**Fire Fighting Procedures:** For safety reasons in case of fire, containers should be stored separately in closed containments. Cool closed containers exposed to fire with water spray.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus and protective suit.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Remain upwind. Avoid breathing smoke. Remove all sources of ignition.

Environmental precautions: Do not flush into surface water or sanitary sewer system.

**Methods and materials for containment and cleaning up:** Evacuate personnel to safe areas. Remove all sources of ignition. Ensure adequate ventilation. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Provide sufficient air exchange and/or exhaust in work rooms. Avoid exceeding of the given occupational exposure limits (see section 8). In case of insufficient ventilation, wear suitable respiratory equipment. Wear personal protective equipment. For personal protection see section 8. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied.

**Conditions for safe storage:** Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Electrical installations / working materials must comply with the technological safety standards.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **Control parameters**

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Ethyl acetate	Rohm and Haas	TWA	150 ppm

	Rohm and Haas	STEL	300 ppm
	ACGIH	TWA	400 ppm
	OSHA Z-1	TWA	1,400 mg/m3 400 ppm
Propyl acetate	ACGIH	TWA	200 ppm
	ACGIH	STEL	250 ppm
	OSHA Z-1	TWA	840 mg/m3 200 ppm
	OSHA P0	TWA	840 mg/m3 200 ppm
	OSHA P0	STEL	1,050 mg/m3 250 ppm
Talc	Rohm and Haas	TWA Respirable	0.5 mg/m3 , Respirable
		fraction.	Fraction, <1%
			crystalline silica
	Rohm and Haas	STEL	3 mg/m3
	OSHA Z-1		· ·
	OSHA Z-3	TWA Dust	
	ACGIH	TWA	
	ACGIH	TWA Respirable	2 mg/m3
		fraction	_

#### **Exposure controls**

**Engineering controls:** Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Hygiene measures: Wash hands before breaks and immediately after handling the product.

**Protective measures:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

#### Individual protection measures

**Eye/face protection:** Chemical resistant goggles must be worn. Eye protection worn must be compatible with respiratory protection system employed.

#### Skin protection

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): 4H Glove (Trademark of Safety 4 A/S of Denmark) Norfoil (Trademark of Siebe North, Inc.) Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Before removing gloves clean them with soap and water.

**Respiratory protection:** A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required under normal operating conditions. Where vapors and/or mists may occur, wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** 

Physical state

liquid

Color amber Odor Ester Odor

**Odor Threshold** no data available Not Applicable Melting point/range no data available Freezing point no data available Boiling point (760 mmHg) no data available

closed cup -3.80 °C (25.16 °F) SETAFLASH CLOSED CUP Flash point

**Evaporation Rate (Butyl Acetate** 

= 1)

no data available

Flammability (solid, gas) Not Applicable Lower explosion limit no data available no data available **Upper explosion limit Vapor Pressure** no data available **Relative Vapor Density (air = 1)** no data available

Relative Density (water = 1) 0.9860 Water solubility negligible

Partition coefficient: nno data available

octanol/water

**Auto-ignition temperature** no data available **Decomposition temperature** no data available **Kinematic Viscosity** no data available **Explosive properties** no data available Oxidizing properties no data available Molecular weight no data available

**Volatile Organic Compounds** 684.50 g/L

NOTE: The physical data presented above are typical values and should not be construed as a specification.

#### 10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: no data available

Possibility of hazardous reactions: This material is considered stable. However, avoid contact with

ignition sources (e.g. sparks, open flame, heated surfaces).

Product will not undergo polymerization.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: no data available

Hazardous decomposition products: no data available

## 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

## **Acute toxicity**

## Acute oral toxicity

Product test data not available.

#### **Acute dermal toxicity**

Product test data not available.

#### Acute inhalation toxicity

Product test data not available.

#### Skin corrosion/irritation

Product test data not available.

#### Serious eye damage/eye irritation

Product test data not available.

#### Sensitization

Product test data not available.

## **Specific Target Organ Systemic Toxicity (Single Exposure)**

Product test data not available.

## **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Product test data not available.

#### Carcinogenicity

Product test data not available.

## **Teratogenicity**

Product test data not available.

## Reproductive toxicity

Product test data not available.

## Mutagenicity

Product test data not available.

## **Aspiration Hazard**

Product test data not available.

## **Additional information**

No toxicity data are available for this material.

#### COMPONENTS INFLUENCING TOXICOLOGY:

#### Ethyl acetate

## **Acute oral toxicity**

LD50, rabbit, 4,934 mg/kg

## Acute dermal toxicity

LD50, rabbit, > 17,900 mg/kg

#### Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. May cause respiratory irritation and central nervous system depression.

LC50, rat, 4 Hour, vapour, > 28.6 mg/l

#### Skin corrosion/irritation

Essentially nonirritating to skin.

May cause drying and flaking of the skin.

#### Serious eye damage/eye irritation

May cause slight eye irritation.

May cause slight temporary corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

#### Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

## **Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause drowsiness or dizziness.

Route of Exposure: Inhalation Target Organs: Nervous system

#### **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

In animals, effects have been reported on the following organs:

Liver.

Respiratory tract.

## Carcinogenicity

For the hydrolysis product: Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen.

#### **Teratogenicity**

Relevant data not available.

## Reproductive toxicity

Relevant data not available.

## Mutagenicity

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

## **Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

## Propyl acetate

#### Acute oral toxicity

LD50, rat, male, 8,700 mg/kg

## **Acute dermal toxicity**

LD50, rabbit, male, > 17,800 mg/kg

#### Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

LC50, rat, 4 Hour, vapour, 32 mg/l

## Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause severe skin irritation with local redness and discomfort.

May cause more severe response on covered skin (under clothing, gloves).

## Serious eye damage/eye irritation

May cause severe eye irritation.

May cause severe corneal injury.

#### Sensitization

For similar material(s):

Did not cause allergic skin reactions when tested in guinea pigs.

## For respiratory sensitization:

No relevant data found.

## **Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause drowsiness or dizziness.

Route of Exposure: Inhalation

Target Organs: Central nervous system

## **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

#### Carcinogenicity

Based on the metabolite(s): 1-Propanol. Acetic acid Did not cause cancer in laboratory animals.

#### **Teratogenicity**

Based on the metabolite(s): At extremely high concentrations, n-propanol has been reported to cause birth defects in rats. At progressively lower concentrations there were no birth defects. These concentrations exceed relevant human dose levels.

#### Reproductive toxicity

Based on the metabolite(s): 1-Propanol. In animal studies, has been shown to interfere with fertility in males. Effects are reversible. These concentrations exceed relevant human dose levels.

#### Mutagenicity

In vitro genetic toxicity studies were inconclusive.

#### **Aspiration Hazard**

May be harmful if swallowed and enters airways.

#### Talc

## **Acute oral toxicity**

Single dose oral LD50 has not been determined.

#### Acute dermal toxicity

The dermal LD50 has not been determined.

#### Acute inhalation toxicity

The LC50 has not been determined.

#### Skin corrosion/irritation

Essentially nonirritating to skin.

## Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Dust may irritate eyes.

#### Sensitization

For skin sensitization:

No relevant data found.

#### For respiratory sensitization:

No relevant data found.

## **Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

## Specific Target Organ Systemic Toxicity (Repeated Exposure)

Repeated inhalation exposure may cause respiratory irritation and lung effects/injury. Impaired lung function and abnormal chest x-rays have been observed in humans repeatedly exposed to high levels of talc dust.

## Carcinogenicity

Rats exposed for their lifetimes to very fine talc particles showed lung inflammation and fibrosis (both sexes) and lung tumors (females only). These effects are believed to be due primarily to overloading the normal respiratory clearance mechanism. Rats may be particularly susceptible to particle clearance overload, resulting in lung injury and tumors. An increase in spontaneously occurring adrenal tumors observed in male rats is of questionable relevance. No increases in tumors were observed in male or female mice.

#### **Teratogenicity**

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

#### Reproductive toxicity

No relevant data found.

#### Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

#### **Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

#### Carcinogenicity

Talc IARC Group 1: Carcinogenic to humans
US NTP Known to be human carcinogen
ACGIH A1: Confirmed Human Carcinogen

## 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

#### **General Information**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### **Toxicity**

## Ethyl acetate

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, Pimephales promelas (fathead minnow), 96 Hour, 230 mg/l

## Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 24 Hour, 3,090 mg/l, DIN 38412

#### Acute toxicity to algae/aquatic plants

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201

EbC50, alga Scenedesmus sp., static test, 48 Hour, Biomass, 3,300 mg/l

#### Chronic toxicity to fish

NOEC, Pimephales promelas (fathead minnow), 32 d, < 9.65 mg/l

#### Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 2.4 mg/l

#### **Propyl acetate**

#### Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 60 mg/l

## Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 672 mg/l, OECD Test Guideline 201

#### Toxicity to bacteria

EC0, Pseudomonas putida, static test, 16 Hour, Growth inhibition, > 170 mg/l

#### **Talc**

#### Acute toxicity to fish

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L). LC50, Danio rerio (zebra fish), 24 Hour, > 100,000 mg/l, Method Not Specified

## Persistence and degradability

#### **Ethyl acetate**

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready

biodegradability. 10-day Window: Pass Biodegradation: 100 % Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 1.82 mg/mg

#### Propyl acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready

biodegradability. 10-day Window: Pass Biodegradation: 62 % Exposure time: 5 d

Method: OECD Test Guideline 301D or Equivalent

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Theoretical Oxygen Demand: 2.04 mg/mg

Chemical Oxygen Demand: 2.04 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	62 %
10 d	80 %
20 d	72 %

#### Stability in Water (1/2-life)

, 78 d

#### Talc

Biodegradability: Biodegradation is not applicable.

## Bioaccumulative potential

#### **Ethyl acetate**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.68 Measured

Bioconcentration factor (BCF): 30 Fish Measured

## Propyl acetate

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Partition coefficient: n-octanol/water(log Pow): 1.4 at 25 °C Calculated

## Acrylic polymer(s)

Bioaccumulation: No relevant data found.

#### Talc

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Bioconcentration factor (BCF):** 3 Estimated.

## Mobility in soil

#### Ethyl acetate

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 3 Estimated.

## **Propyl acetate**

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 11 Estimated.

#### Talc

No data available.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** For disposal, incinerate this material at a facility that complies with local, state, and federal regulations. (See 40 CFR 268)

#### 14. TRANSPORT INFORMATION

DOT

Proper shipping name Resin solution UN number UN 1866

Class 3 Packing group II

Reportable Quantity Ethyl acetate

**Classification for SEA transport (IMO-IMDG):** 

Proper shipping name RESIN SOLUTION

UN number UN 1866

Class 3 Packing group II

Transport in bulk Consult IMO regulations before transporting ocean bulk

according to Annex I or II of MARPOL 73/78 and the

**IBC or IGC Code** 

Classification for AIR transport (IATA/ICAO):

Proper shipping name Resin solution UN number UN 1866

Class 3 Packing group II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. 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 considered hazardous under 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

Fire Hazard

Acute Health Hazard Chronic Health Hazard

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

## Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or nondesignated RCRA ICR substance(s). (Nondesignated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

See Section 13, Disposal Considerations, Subsection Disposal, for CERCLA classification.

Components CASRN RQ

Ethyl acetate 141-78-6 5000 lbs RQ

## Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

#### California (Proposition 65)

This product contains trace levels of a component or components known to the state of California to cause cancer:

ComponentsCASRNVinyl chloride75-01-4

## **United States TSCA Inventory (US.TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

#### 16. OTHER INFORMATION

## **Hazard Rating System**

#### **HMIS**

Health	Flammability	Physical Hazard
1*	3	0

<sup>\* =</sup> Chronic Effects (See Hazards Identification)

#### Revision

Identification Number: 101109783 / 1001 / Issue Date: 08/08/2014 / Version: 1.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)

OSHA P0	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
	Contaminants
OSHA Z-3	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
Rohm and Haas	Rohm and Haas OEL's
STEL	Short term exposure limit
TWA	time weighted average

#### **Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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.