

# SAFETY DATA SHEET

Date of last issue: -  
Date of first issue: 2019-03-01

## SECTION 1. IDENTIFICATION

Product name : MS41-CL300U / MS41-CL300A

### Manufacturer or supplier's details

Company : MUTOH AUSTRALIA PTY. LTD.  
Address : Unit 19/76 Reserve Road, Artarmon, NSW 2064, Australia  
Contact section : admin@mutoh-au.com or +61 2 9437 1366  
Telephone : +61 2 94371366  
Emergency telephone number : Emergency phone number (business hours): +61 2 9437 1366

### Recommended use of the chemical and restrictions on use

Recommended use : Digital printing

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 4

Skin irritation : Category 2

### GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H227 Combustible liquid.  
H315 Causes skin irritation.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

**Storage:**  
P403 + P235 Store in a well-ventilated place. Keep cool.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

Vapors may form explosive mixture with air.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Bis(2-ethoxyethyl) ether	112-36-7	>= 35 -< 45
(2-Methoxymethylethoxy)propanol	34590-94-8	>= 35 -< 45

## SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- Notes to physician : Treat symptomatically and supportively.

## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.  
Flash back possible over considerable distance.  
Vapors may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions : Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapors/mists with a water spray jet.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

## SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Avoid inhalation of vapor or mist.  
Do not swallow.  
Avoid contact with eyes.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.  
Keep container tightly closed.  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.

Keep tightly closed.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.  
Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents  
Explosives  
Gases

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
(2-Methoxymethyl ethoxy)propanol	34590-94-8	TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		TWA	100 ppm 600 mg/m <sup>3</sup>	NIOSH REL
		ST	150 ppm 900 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 600 mg/m <sup>3</sup>	OSHA Z-1

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.  
Minimize workplace exposure concentrations.

### Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

### Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.

### Eye protection

: Wear the following personal protective equipment:  
Safety glasses

### Skin and body protection

: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
Flame retardant antistatic protective clothing, unless assessment

demonstrates that the risk of explosive atmospheres or flash fires is low  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear

Odor : slight

Odor Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point :  $\geq 160$  °F /  $\geq 71$  °C  
Method: Seta closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 0.9 - 1.1 g/cm<sup>3</sup>

Solubility(ies)

Water solubility : soluble

Solubility in other solvents : soluble  
Solvent: organic solvent

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

Decomposition temperature : The substance or mixture is not classified self-reactive.

Viscosity

Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	Not applicable

## SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Combustible liquid. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

### Acute toxicity

Not classified based on available information.

#### **Product:**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

#### **Components:**

##### **Bis(2-ethoxyethyl) ether:**

Acute oral toxicity : LD50 (Rat): 4,970 mg/kg

##### **(2-Methoxymethylethoxy)propanol:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5.296 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

### Skin corrosion/irritation

Causes skin irritation.

#### **Components:**

##### **Bis(2-ethoxyethyl) ether:**

Result: Skin irritation

Remarks: Based on data from similar materials

**(2-Methoxymethylethoxy)propanol:**

Species: Rabbit  
Result: No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:**

**Bis(2-ethoxyethyl) ether:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

**(2-Methoxymethylethoxy)propanol:**

Result: No eye irritation

**Respiratory or skin sensitization**

**Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:**

**Bis(2-ethoxyethyl) ether:**

Test Type: Local lymph node assay (LLNA)  
Routes of exposure: Skin contact  
Species: Mouse  
Method: OECD Test Guideline 429  
Result: negative  
Remarks: Based on data from similar materials

**(2-Methoxymethylethoxy)propanol:**

Routes of exposure: Skin contact  
Species: Humans  
Result: negative

**Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**Bis(2-ethoxyethyl) ether:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

**(2-Methoxymethylethoxy)propanol:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Components:**

**(2-Methoxymethylethoxy)propanol:**

Species: Rat  
Application Route: Inhalation (vapor)  
Exposure time: 2 Years  
Method: OECD Test Guideline 453  
Result: negative

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Bis(2-ethoxyethyl) ether:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rabbit  
Application Route: Ingestion  
Result: negative

**(2-Methoxymethylethoxy)propanol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Inhalation (vapor)  
Method: OECD Test Guideline 416  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation (vapor)  
Result: negative

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Repeated dose toxicity**

**Components:**

**Bis(2-ethoxyethyl) ether:**

Species: Rat  
NOAEL: 2.49 mg/l  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 4 Weeks  
Method: OECD Test Guideline 412



**(2-Methoxymethylethoxy)propanol:**

Species: Rat  
NOAEL: 1.21 mg/l  
Application Route: Inhalation (vapor)  
Exposure time: 13 Weeks  
Method: OECD Test Guideline 413

Species: Rat  
NOAEL: 1,000 mg/kg  
Application Route: Ingestion  
Exposure time: 4 Weeks

**Aspiration toxicity**

Not classified based on available information.

**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**Bis(2-ethoxyethyl) ether:**

Toxicity to fish	:	LC50: > 10,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50: 6,600 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC10 (Ceriodaphnia dubia (water flea)): > 1 mg/l Exposure time: 7 d Remarks: Based on data from similar materials
Toxicity to microorganisms	:	NOEC: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

**(2-Methoxymethylethoxy)propanol:**

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,919 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Selenastrum capricornutum (green algae)): > 969 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): >= 0.5 mg/l Exposure time: 22 d Method: OECD Test Guideline 211
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 4,168 mg/l Exposure time: 18 h

**Persistence and degradability**

**Components:**

**Bis(2-ethoxyethyl) ether:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301F
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**(2-Methoxymethylethoxy)propanol:**

Biodegradability : Result: Readily biodegradable.  
 Biodegradation: 96 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301F

**Bioaccumulative potential**

**Components:**

**Bis(2-ethoxyethyl) ether:**

Partition coefficient: : log Pow: 0.39  
 n-octanol/water

**(2-Methoxymethylethoxy)propanol:**

Partition coefficient: : log Pow: 0.004  
 n-octanol/water

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
 Empty containers retain residue and can be dangerous.  
 Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.  
 If not otherwise specified: Dispose of as unused product.

**SECTION 14. TRANSPORT INFORMATION**

**International Regulations**

**UNRTDG**

Not regulated as dangerous goods

**IATA-DGR**

Not regulated as dangerous goods

**IMDG-Code**

Not regulated as dangerous goods

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation**

**49 CFR**

UN/ID/NA number : NA 1993  
 Proper shipping name : Combustible liquid, n.o.s.  
 ((2-Methoxymethylethoxy)propanol, Bis(2-ethoxyethyl) ether)  
 Class : CBL  
 Packing group : III  
 Labels : None  
 ERG Code : 128  
 Marine pollutant : no  
 Remarks : Above applies only to containers over 119 gallons or 450 liters.  
 Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Skin corrosion or irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Bis(2-ethoxyethyl) ether	112-36-7	>= 35 - < 45 %
Triethylene glycol monomethyl ether	112-35-6	>= 15 - < 25 %

### US State Regulations

#### Pennsylvania Right To Know

(2-Methoxymethylethoxy)propanol	34590-94-8
Bis(2-ethoxyethyl) ether	112-36-7
Triethylene glycol monomethyl ether	112-35-6

#### California List of Hazardous Substances

(2-Methoxymethylethoxy)propanol	34590-94-8
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#### California Permissible Exposure Limits for Chemical Contaminants

(2-Methoxymethylethoxy)propanol	34590-94-8
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#### Additional regulatory information

Bis(2-ethoxyethyl) ether	112-36-7
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The United States Environmental Protection Agency (USEPA) has established a Significant New Use Rule (SNUR) for one of the components in this product.

See 40 CFR § 721.10229.

## SECTION 16. OTHER INFORMATION

### Further information

#### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek  
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday  
 OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 2019-03-01

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.