

# SAFETY DATA SHEET



Commercial Product Name: ALEXIT-FST Strukturlack 346-65/topcoat  
Product No.: 346659A047000

Version 1.8      Revision Date: 09/21/2019      SDS Number: F-346659A047      Date of last issue: 04/18/2019  
Date of first issue: 07/28/2016

## SECTION 1. IDENTIFICATION

Product name : ALEXIT-FST Strukturlack 346-65/topcoat 9A04 sunny white semi-gloss

Product number : 346659A047000

### Manufacturer or supplier's details

Manufacturer, importer, supplier : Mankiewicz Coatings L.L.C

Address : 1200 Charleston Regional Parkway  
Charleston, South Carolina 29492  
USA

Telephone : +1 (843) 6547755  
Telefax : +1 (843) 6547759  
E-mail address : sdb\_info@umco.de

Emergency telephone : CHEMTREC +1 (800) 4249300 or + (703) 5273887

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

Recommended use : Industrial serial painting

## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

### GHS label elements

Not a hazardous substance or mixture.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture of synthetic resins, water and pigments

### Components

Chemical name	CAS-No.	Concentration (% w/w)
titanium dioxide	13463-67-7	$\geq 12.5 - < 20$
2-butoxyethanol	111-76-2	$\geq 1 - < 5$
POLYETHER	Not Assigned	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret



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## SECTION 4. FIRST AID MEASURES

- General advice : In all cases of doubt, or when sickness symptoms persist, seek medical attention.  
Never give anything by mouth to an unconscious person.
- If inhaled : Remove to fresh air, keep patient warm and at rest.  
Irregular breathing/no breathing: artificial respiration.  
If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash skin thoroughly with soap and water or use recognised skin cleanser.  
Do NOT use solvents or thinners !
- In case of eye contact : Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
- If swallowed : Do NOT induce vomiting.  
If accidentally swallowed obtain immediate medical attention.  
Never give anything by mouth to an unconscious person.  
Keep at rest.
- Most important symptoms and effects, both acute and delayed : For information on symptoms and effects refer to Section 2 Hazard statements and Section 11 Toxicological Information.
- Notes to physician : No information available.

## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol resistant foam, CO2, powders, water spray
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Further information : Cool endangered containers with water in case of fire.  
**DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES!!**
- Special protective equipment for fire-fighters : As in any fire, wear self-contained breathing apparatus pressure - demand, MSHA / NIOSH (approved or equivalent) and full protective gear.



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## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Exclude sources of ignition and ventilate the area.  
Do not inhale vapors.  
Refer to protective measures listed in sections 7 and 8.  
Evacuate personnel to safe areas.
- Environmental precautions : Do not let product enter drains.  
If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.
- Methods and materials for containment and cleaning up : Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).  
Clean preferably with a detergent; avoid use of solvents.

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## SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Keep away from ignition sources and provide for good ventilation.
- Advice on safe handling : Comply with the health and safety at work laws.  
In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded.  
Smoking, eating and drinking should be prohibited in the application area.  
Observe specific national regulations for handling and use of paints.
- Conditions for safe storage : Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Further information on storage conditions : Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight.  
Keep container dry in a cool, well-ventilated place.  
Avoid cooling to under 32°F.
- Materials to avoid : Keep away from oxidizing agents and strongly acid or alkaline materials.
- Recommended storage temperature : 41 - 95 °F / 5 - 35 °C



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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
titanium dioxide	13463-67-7	TWA	10 mg/m3	CR OEL
	Further information: Not classifiable as a human carcinogen, Lower Respiratory Tract irritation			
		TWA	10 mg/m3	CA AB OEL
		TWA (Total dust)	10 mg/m3	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m3	CA BC OEL
		TWAEV (total dust)	10 mg/m3	CA QC OEL
		VLE-PPT	10 mg/m3	NOM-010-STPS-2014
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
2-butoxyethanol	111-76-2	TWA	20 ppm	CR OEL
	Further information: Confirmed animal carcinogen, Substances for which there is a Biological Exposure Index or Indices (see BEI section), Eye irritation, Upper Respiratory Tract irritation			
		TWA	20 ppm 97 mg/m3	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	20 ppm 97 mg/m3	CA QC OEL
		VLE-PPT	20 ppm	NOM-010-STPS-2014
		TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m3	NIOSH REL
		TWA	50 ppm 240 mg/m3	OSHA Z-1
		TWA	25 ppm 120 mg/m3	OSHA P0

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis



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2-butoxyethanol	111-76-2	Butoxyacetic acid (BAA)	Urine	End of shift	200 mg/g Creatinine	MX BEI
		Butoxyacetic acid (BAA)	Urine	End of shift (As soon as possible after exposure ceases)	200 mg/g Creatinine	ACGIH BEI
		Butoxyacetic acid (BAA)	Urine	End of shift	200 mg/g Creatinine	CR BEI

**Engineering measures** : Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and below the OEL (= Occupational Exposure Limit), suitable respiratory protection must be worn.

**Personal protective equipment**

**Respiratory protection** : If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators: Use MSHA/NIOSH approved respirator if concentration exceeds recommended exposure levels. Dry grinding, torch cutting and/or welding however can produce hazardous dust and/or vapor. If possible, machine employing a wet medium. Where practicable, install exhaust hoods to improve capture of vapors and fumes and avoid exposition; otherwise wear respiratory protection equipment.

Hand protection

**Remarks** : Glove permeation data does not exist for this material. The following glove(s) should be used for splash protection only:  
 Appropriate material: nitrile

**Eye protection** : Use safety glasses or face shield (ANSI Z87.1 or approved equivalent).

**Skin and body protection** : Personal should wear protective clothing as necessary to prevent skin contact. All parts of the body should be washed after contact.

**Protective measures** : Do not eat or drink during work - no smoking. Avoid product contact with skin, eyes and clothing.



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When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapor in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process until such time as the particulates and solvent vapor concentration has fallen below the exposure limits.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	according product name
Odor	:	characteristic
Boiling point/boiling range	:	ca. 212 °F / 100 °C
Flash point	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	ca. 100 hPa (122 °F / 50 °C)
Density	:	ca. 12.10 lb/gal (1.45 g/cm <sup>3</sup> ) (68 °F / 20 °C)
Solubility(ies) Water solubility	:	completely miscible
Autoignition temperature	:	> 572 °F / > 300 °C
Viscosity Viscosity, kinematic	:	21 mm <sup>2</sup> /s (104 °F / 40 °C) 684 mm <sup>2</sup> /s (73 °F / 23 °C)
Flow time	:	> 150 s Cross section: 4 mm Method: DIN 53211  > 100 s



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Cross section: 6 mm  
Method: ISO 2431

## SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under normal conditions.
- Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use. There are no data available on the preparation itself.
- Conditions to avoid : Stable under recommended storage and handling conditions (See section 7).
- Incompatible materials : Keep away from oxidizing agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions.
- Hazardous decomposition products : When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Product:

- Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method
- Acute inhalation toxicity : Acute toxicity estimate: > 200 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method
- Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

#### Components:

##### **2-butoxyethanol:**

- Acute oral toxicity : LD50 (Rat): 1,300 mg/kg
- Acute dermal toxicity : LD50 (Rabbit): > 400 - 2,000 mg/kg

### Carcinogenicity



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- 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.

## Further information

### Product:

Remarks : Exposure of vapor concentration in excess of the stated OEL's may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue muscular weakness, drowsiness and in extrem cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

### Ecotoxicology Assessment

Acute aquatic toxicity : There are no data available on the preparation itself.

### Persistence and degradability

#### Product:

Biodegradability : Remarks: There are no data available on the preparation itself.

### Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: There are no data available on the preparation itself.

### Mobility in soil

#### Product:





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Mobility : Remarks: There are no data available on the preparation itself.

## Other adverse effects

### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : There are no data available on the preparation itself.

The product should not be allowed to enter drains or water courses.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

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

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

#### 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

Not regulated as a dangerous good

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## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

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



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**SARA 311/312 Hazards** : Acute Health Hazard  
No SARA Hazards

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

2-butoxyethanol 111-76-2 >= 1 - < 5 %

## Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

2-butoxyethanol 111-76-2 >= 1 - < 5 %

## Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

n-butyl acetate	123-86-4	>= 0 - < 0.1 %
ammonia, aqueous solution	1336-21-6	>= 0 - < 0.1 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

n-butyl acetate	123-86-4	>= 0 - < 0.1 %
ammonia, aqueous solution	1336-21-6	>= 0 - < 0.1 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

## US State Regulations

### Massachusetts Right To Know

2-butoxyethanol 111-76-2

### Pennsylvania Right To Know

2-butoxyethanol	111-76-2
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Chrome antimony titanium buff rutile	68186-90-3

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

Chrome antimony titanium buff rutile 68186-90-3

### Washington Chemicals of High Concern

Chrome antimony titanium buff rutile 68186-90-3



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## California Prop. 65

WARNING: This product can expose you to chemicals including Distillates (petroleum), hydrotreated heavy paraffinic, carbon black, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## California List of Hazardous Substances

2-butoxyethanol 111-76-2

## California Permissible Exposure Limits for Chemical Contaminants

titanium dioxide 13463-67-7  
2-butoxyethanol 111-76-2

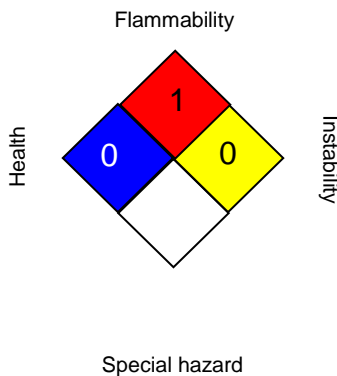
## The ingredients of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### HMIS® IV:

HEALTH	/	0
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "/" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Health  
0=Slightly Hazardous  
2=Hazardous  
3=Extreme danger  
4=Deadly

Flammability  
0=Will not burn  
2=Flashpoint below 200 F  
3=Flashpoint below 100 F  
4=Flashpoint below 73 F

Instability  
0=Stable  
1=Unstable if heated  
2=Violent chemical reaction; water reactive



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3=Shock or heat may detonate  
4=May detonate

Special hazard  
SA Simple Asphyxiant  
ACID Acid  
OX Oxidizer  
W Water Reactive  
CORR Corrosive

## Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)  
CA BC OEL : Canada. British Columbia OEL  
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants  
CR BEI : Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposure Indices  
CR OEL : Costa Rica. Maximum allowable occupational exposure limits in the workplace.  
MX BEI : Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for workers occupationally exposed to chemical agents  
NIOSH REL : USA. NIOSH Recommended Exposure Limits  
NOM-010-STPS-2014 : Mexico. Norm NOM-010-STPS-2014 on Chemicals Polluting the Work Environment - Identification, Assessment and Control - Appendix 1 Occupational Exposure Limits  
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  
ACGIH / TWA : 8-hour, time-weighted average  
CA AB OEL / TWA : 8-hour Occupational exposure limit  
CA BC OEL / TWA : 8-hour time weighted average  
CA QC OEL / TWAEV : Time-weighted average exposure value  
CR OEL / TWA : Time weighted average 8-hr value  
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
NOM-010-STPS-2014 / VLE- : Time weighted average limit value  
PPT  
OSHA P0 / TWA : 8-hour time weighted average  
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;



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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

Revision Date : 09/21/2019

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8



# SAFETY DATA SHEET



Commercial Product Name: ALEXIT-Härter / Hardener 345-19  
Product No.: 3451900000000

Version 1.18      Revision Date: 02/14/2019      SDS Number: F-3451900000      Date of last issue: 01/24/2019  
Date of first issue: 06/16/2015

## SECTION 1. IDENTIFICATION

Product name : ALEXIT-Härter / Hardener 345-19 farblos / transparent  
Product number : 3451900000000

### Manufacturer or supplier's details

Manufacturer, importer, supplier : Mankiewicz Coatings L.L.C

Address : 1200 Charleston Regional Parkway  
Charleston, South Carolina 29492  
USA

Telephone : +1 (843) 6547755  
Telefax : +1 (843) 6547759  
E-mail address : sdb\_info@umco.de

Emergency telephone : CHEMTREC +1 (800) 4249300 or + (703) 5273887

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

Recommended use : Industrial serial painting

## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 4  
Acute toxicity (Inhalation) : Category 4  
Respiratory sensitization : Category 1  
Skin sensitization : Category 1  
Carcinogenicity : Category 2  
Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)  
Specific target organ systemic toxicity - repeated exposure : Category 2

### GHS label elements

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Commercial Product Name: ALEXIT-Härter / Hardener 345-19  
Product No.: 3451900000000

Version 1.18      Revision Date: 02/14/2019      SDS Number: F-3451900000      Date of last issue: 01/24/2019  
Date of first issue: 06/16/2015

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H227 Combustible liquid.  
H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P285 In case of inadequate ventilation wear respiratory protection.  
**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
**Storage:**  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste dis-

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posal plant.

## Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Hardener based on polyisocyanates

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Hexamethylene diisocyanate, oligomers	28182-81-2	$\geq 40 - \leq 100$
aliphatic polyisocyanate, hydrophilic	191427-71-1	$\geq 5 - < 12.5$
2-methoxy-1-methylethyl acetate	108-65-6	$\geq 1 - < 5$
xylenes	1330-20-7	$\geq 1 - < 5$
ethylbenzene	100-41-4	$\geq 0.5 - < 1$
hexamethylene diisocyanate	822-06-0	$\geq 0.1 - < 0.25$

## SECTION 4. FIRST AID MEASURES

- General advice : In all cases of doubt, or when sickness symptoms persist, seek medical attention.  
Never give anything by mouth to an unconscious person.
- If inhaled : Remove to fresh air, keep patient warm and at rest.  
Irregular breathing/no breathing: artificial respiration.  
If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash skin thoroughly with soap and water or use recognised skin cleanser.  
Do NOT use solvents or thinners !
- In case of eye contact : Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
- If swallowed : Do NOT induce vomiting.  
If accidentally swallowed obtain immediate medical attention.  
Never give anything by mouth to an unconscious person.  
Keep at rest.
- Most important symptoms and effects, both acute and delayed : For information on symptoms and effects refer to Section 2 Hazard statements and Section 11 Toxicological Information.
- Notes to physician : No information available.





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## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol resistant foam, CO2, powders, water spray
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Further information : Cool endangered containers with water in case of fire. DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES!!
- Special protective equipment for fire-fighters : As in any fire, wear self-contained breathing apparatus pressure - demand, MSHA / NIOSH (approved or equivalent) and full protective gear.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Exclude sources of ignition and ventilate the area.  
Do not inhale vapors.  
Refer to protective measures listed in sections 7 and 8.  
Evacuate personnel to safe areas.  
Immediately clean contaminated areas with following substances:
- |                                 |          |
|---------------------------------|----------|
| Water                           | 45 Vol.% |
| Ethanol or Isopropyl Alcohol    | 50 Vol.% |
| Ammonia solution (density=0,88) | 5 Vol.%  |
- Alternative applicable to that (not flammable):
- |                  |          |
|------------------|----------|
| Sodium Carbonate | 5 Vol.%  |
| Water            | 95 Vol.% |
- Environmental precautions : Do not let product enter drains.  
If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.  
Add the specified decontamination material to the remnants and let stand for several days until no further reaction is observed. Once this stage is reached, close container and dispose according to local regulations.
- Methods and materials for containment and cleaning up : Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).  
Clean preferably with a detergent; avoid use of solvents.

## SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : The product should only be used in areas from which all naked lights and other sources of ignition have been

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excluded.  
 Preparation may charge electrostatically: always use earthing leads when transferring from one container to another.  
 Operators should wear anti-static footwear and clothing. No sparking tools should be used.  
 Vapors are heavier than air and may spread along floors.  
 Vapors may form explosive mixtures with air.

**Advice on safe handling** : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used !  
 Prevent the creation of flammable or explosive concentrations of vapor in air and avoid vapor concentrations higher than the occupational exposure limits.  
 Comply with the health and safety at work laws.  
 Smoking, eating and drinking should be prohibited in the application area.

**Conditions for safe storage** : Electrical equipment should be protected to the appropriate standard. Floors should be of the conducting type.  
 Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access.  
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Further information on storage conditions** : Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight.  
 Keep container dry in a cool, well-ventilated place.  
 Precautions should be taken to minimise exposure to atmospheric humidity or water: CO<sub>2</sub> will be formed which in closed containers can result in pressurisation. **DO NOT KEEP THE CONTAINERS SEALED !!**

**Materials to avoid** : Keep away from oxidizing agents and strongly acid or alkaline materials.

**Recommended storage temperature** : 41 - 95 °F / 5 - 35 °C

## 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-methoxy-1-methylethyl acetate	108-65-6	TWA	50 ppm	CA BC OEL
		STEL	75 ppm	CA BC OEL
		TWA	50 ppm 270 mg/m <sup>3</sup>	CA ON OEL

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xylenes	1330-20-7	TWA	50 ppm	US WEEL
		VLE-PPT	100 ppm	NOM-010-STPS-2014
		VLE-CT	150 ppm	NOM-010-STPS-2014
		TWA	100 ppm 435 mg/m3	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		STEL	150 ppm 651 mg/m3	CA AB OEL
		TWA	100 ppm 434 mg/m3	CA AB OEL
		TWAEV	100 ppm 434 mg/m3	CA QC OEL
		STEV	150 ppm 651 mg/m3	CA QC OEL
		TWA	100 ppm	CA BC OEL
		STEL	150 ppm	CA BC OEL
		ethylbenzene	100-41-4	STEL
TWA	100 ppm 435 mg/m3			OSHA P0
TWA	100 ppm 434 mg/m3			CA AB OEL
STEL	125 ppm 543 mg/m3			CA AB OEL
TWA	20 ppm			CA BC OEL
STEV	125 ppm 543 mg/m3			CA QC OEL
TWAEV	100 ppm 434 mg/m3			CA QC OEL
VLE-PPT	20 ppm			NOM-010-STPS-2014
TWA	20 ppm			ACGIH
TWA	100 ppm 435 mg/m3			NIOSH REL
ST	125 ppm 545 mg/m3			NIOSH REL
TWA	100 ppm 435 mg/m3			OSHA Z-1
TWA	100 ppm 435 mg/m3			OSHA P0
STEL	125 ppm 545 mg/m3	OSHA P0		
hexamethylene diisocyanate	822-06-0		0.005 ml/m3	ACGIH
		TWA	0.005 ppm 0.03 mg/m3	CA AB OEL
		TWA	0.005 ppm	CA BC OEL
		C	0.01 ppm	CA BC OEL
		TWA	0.005 ppm	CA ON OEL
		C	0.02 ppm	CA ON OEL

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
 Georg-Wilhelm-Straße 189  
 21107 Hamburg (Wilhelmsburg)  
 Tel.: +49 (0) 40 / 75 10 30  
 Fax: +49 (0) 40 / 75 10 33 75  
 www.mankiewicz.de

Bank Name Deutsche Bank  
 Ort Hamburg  
 Kto.-Nr. 600227300  
 BLZ 200 700 00  
 BIC DEUTDE33  
 IBAN DE58 2007 0000 0600 2273 00  
 DE34 2003 0000 0059 2733 00  
 DE85 2001 0020 0000 3732 05

HYPVEDEM300  
 PBNKDEFF200

Sitz/Registriergericht Hamburg: HRA 42442  
 Persönlich haftende Gesellschafterin:  
 Grau Gebr. Beteiligungs-GmbH  
 Sitz/Registriergericht Hamburg: HRB 17189  
 Geschäftsführender Gesellschafter:  
 Michael O. Grau

Bureau Veritas  
 Certification:  
 ISO 9001,  
 TS 16949,  
 EN 9100



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		TWAEV	0.005 ppm 0.034 mg/m <sup>3</sup>	CA QC OEL
		VLE-PPT	0.005 ppm	NOM-010-STPS-2014
		TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.035 mg/m <sup>3</sup>	NIOSH REL
		C	0.02 ppm 0.14 mg/m <sup>3</sup>	NIOSH REL

## Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
xylene	1330-20-7	Methyl-hippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI
		Methyl-hippuric acid	Urine	End of shift	1.5 g/g creatinine	MX BEI
ethylbenzene	100-41-4	Sum of Mandelic acid plus phenylglyoxylic acid	Urine	End of shift at end of work-week	0.7 g/g creatinine	MX BEI
		Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI
hexamethylene diisocyanate	822-06-0	1,6-Hexamethylene diamine	Urine	End of shift	15 µg/g creatinine	ACGIH BEI

**Engineering measures** : Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and below the OEL (= Occupational Exposure Limit), suitable respiratory protection must be worn.

## Personal protective equipment

Respiratory protection : By spraying: air-fed respirator(MHSA/NIOSH approved)

By other operations than spraying: in well ventilated



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areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask(it should be MSHA/NIOSH approved).  
Use MSHA/NIOSH approved respirator if concentration exceeds recommended exposure levels.

## Hand protection

Remarks : Glove permeation data does not exist for this material.  
The following glove(s) should be used for splash protection only:  
Appropriate material: nitrile

Eye protection : Use safety glasses or face shield (ANSI Z87.1 or approved equivalent).

Skin and body protection : Personal should wear protective clothing as necessary to prevent skin contact. All parts of the body should be washed after contact.

Protective measures : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.  
Do not eat or drink during work - no smoking.  
Avoid product contact with skin, eyes and clothing.  
Avoid the inhalation of dust from sanding, particulates and spray mist arising from the application of this preparation.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : according product name

Odor : characteristic

Boiling point/boiling range : ca. 212 °F / 100 °C

Flash point : 176.9 °F / 80.5 °C  
Method: ISO 13736

Upper explosion limit / Upper flammability limit : 10.0 %(V)

Lower explosion limit / Lower flammability limit : 1.0 %(V)

Vapor pressure : ca. 100 hPa (122 °F / 50 °C)

Density : ca. 9.18 lb/gal (1.10 g/cm3)  
(68 °F / 20 °C)

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
www.mankiewicz.de

Bank Name	Ort	Kto.-Nr.	BLZ	BIC	IBAN
Deutsche Bank	Hamburg	600227300	200 700 00	DEUTDE33HAN	DE58 2007 0000 0600 2273 00
HypoVereinsbank	Hamburg	59273300	200 300 00	HYVEDE33HAN	DE34 2003 0000 0059 2733 00
Postbank	Hamburg	373205	200 100 20	PBNKDE33HAN	DE85 2001 0020 0000 3732 05

Sitz/Registriergericht Hamburg: HRA 42442  
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Solubility(ies)  
Water solubility : insoluble

Autoignition temperature : > 752 °F / > 400 °C

Viscosity  
Viscosity, kinematic : 21 mm<sup>2</sup>/s (104 °F / 40 °C)  
171 mm<sup>2</sup>/s (73 °F / 23 °C)

Flow time : 44 s  
Cross section: 4 mm  
Method: DIN 53211

30 s  
Cross section: 6 mm  
Method: ISO 2431

## SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use. There are no data available on the preparation itself.

Conditions to avoid : Stable under recommended storage and handling conditions (See section 7).

Incompatible materials : Keep away from oxidizing agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions.  
The product reacts slowly with water resulting in evolution of carbon dioxide. In closed containers, pressure build up could result distortion blowing and in extreme cases bursting of the container.

Hazardous decomposition products : In a fire, hazardous decomposition products, such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Product:

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

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Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute toxicity estimate: 2.13 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

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

## Components:

### **Hexamethylene diisocyanate, oligomers:**

Acute inhalation toxicity : LC50 (Rat, male and female): 0.543 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

### **xylenes:**

Acute oral toxicity : LD50 (Rat): 4,300 mg/kg

## **Respiratory or skin sensitization**

### Components:

### **Hexamethylene diisocyanate, oligomers:**

Species : Mouse  
Assessment : May cause sensitization by skin contact.  
Method : OECD Test Guideline 406

## **Carcinogenicity**

**IARC** Group 2B: Possibly carcinogenic to humans  
ethylbenzene 100-41-4

**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.

## **Further information**

### Product:

Remarks : Exposure of vapor concentration in excess of the stated OEL's may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs



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include headache, dizziness, fatigue muscular weakness, drowsiness and in extrem cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage.

Based on the properties of the isocyanate components and considering toxicological data on similar preparations: This preparation may cause acute irritation and/or sensitization of the respiratory system leading to an asthmatic condition, wheeziness and a tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

#### Ecotoxicology Assessment

Acute aquatic toxicity : There are no data available on the preparation itself.

### Persistence and degradability

#### Product:

Biodegradability : Remarks: There are no data available on the preparation itself.

### Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: There are no data available on the preparation itself.

### Mobility in soil

#### Product:

Mobility : Remarks: There are no data available on the preparation itself.

### Other adverse effects

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufac-





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ured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : There are no data available on the preparation itself.

The product should not be allowed to enter drains or water courses.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

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

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

#### 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-methoxy-1-methylethyl acetate, Xylene)  
Class : 3  
Packing group : III  
Labels : FLAMMABLE LIQUID  
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.

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## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know

#### 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** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard  
Flammable (gases, aerosols, liquids, or solids)  
Acute toxicity (any route of exposure)  
Respiratory or skin sensitization  
Carcinogenicity  
Specific target organ toxicity (single or repeated exposure)

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

xylenes	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 0.1 - < 1 %

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

xylenes	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 0.1 - < 1 %
hexamethylene diisocyanate	822-06-0	>= 0.1 - < 1 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

xylenes	1330-20-7	>= 1 - < 5 %
---------	-----------	--------------

VOC content excluding water

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

xylenes	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 0.1 - < 1 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

xylenes	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 0.1 - < 1 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

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## US State Regulations

### Massachusetts Right To Know

xylenes 1330-20-7  
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate 4098-71-9

### Pennsylvania Right To Know

xylenes 1330-20-7  
ethylbenzene 100-41-4  
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate 4098-71-9

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

ethylbenzene 100-41-4

### Washington Chemicals of High Concern

ethylbenzene 100-41-4

### California Prop. 65

WARNING: This product can expose you to chemicals including ethylbenzene, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### California List of Hazardous Substances

xylenes 1330-20-7

### California Permissible Exposure Limits for Chemical Contaminants

2-methoxy-1-methylethyl acetate 108-65-6  
xylenes 1330-20-7

### The ingredients of this product are reported in the following inventories:

TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

### TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:  
Dipropylglykoldimethylether 111109-77-4

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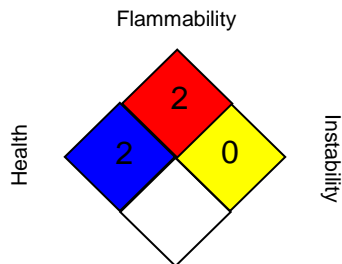
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## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



Special hazard.

#### HMIS® IV:

HEALTH	*	2
FLAMMABILITY		2
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Health  
0=Slightly Hazardous  
2=Hazardous  
3=Extreme danger  
4=Deadly

Flammability  
0=Will not burn  
2=Flashpoint below 200 F  
3=Flashpoint below 100 F  
4=Flashpoint below 73 F

Instability  
0=Stable  
1=Unstable if heated  
2=Violent chemical reaction; water reactive  
3=Shock or heat may detonate  
4=May detonate

Special hazard.  
SA Simple Asphyxiant  
ACID Acid  
OX Oxidizer  
W Water Reactive  
CORR Corrosive

#### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)  
CA BC OEL : Canada. British Columbia OEL  
CA ON OEL : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.  
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

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- MX BEI : Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for workers occupationally exposed to chemical agents
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- NOM-010-STPS-2014 : Mexico. Norm NOM-010-STPS-2014 on Chemicals Polluting the Work Environment - Identification, Assessment and Control - Appendix 1 Occupational Exposure Limits
- 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
- US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
- ACGIH / TWA : 8-hour, time-weighted average
- ACGIH / STEL : Short-term exposure limit
- CA AB OEL / TWA : 8-hour Occupational exposure limit
- CA AB OEL / STEL : 15-minute occupational exposure limit
- CA BC OEL / TWA : 8-hour time weighted average
- CA BC OEL / STEL : short-term exposure limit
- CA BC OEL / C : ceiling limit
- CA ON OEL / C : Ceiling Limit (C)
- CA ON OEL / TWA : Time-Weighted Average Limit (TWA)
- CA QC OEL / TWA EV : Time-weighted average exposure value
- CA QC OEL / STEV : Short-term exposure value
- 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
- NIOSH REL / C : Ceiling value not be exceeded at any time.
- NOM-010-STPS-2014 / VLE-PPT : Time weighted average limit value
- NOM-010-STPS-2014 / VLE-CT : Short term exposure limit value
- OSHA P0 / TWA : 8-hour time weighted average
- OSHA P0 / STEL : Short-term exposure limit
- OSHA Z-1 / TWA : 8-hour time weighted average
- US WEEL / TWA : 8-hr TWA

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 Pre-

# SAFETY DATA SHEET



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vention 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

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