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RENCAST® 6442 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	08/26/2015	400001012691	Date of first issue: 08/26/2015

SECTION 1. IDENTIFICATION

Product name : RENCAST® 6442 US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America
Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : MSDS@huntsman.com

Emergency telephone : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 3

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Chronic aquatic toxicity : Category 3

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of

the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P285 In case of inadequate ventilation wear respiratory protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	3 - 7
4,4'-methylenedicyclohexyl diisocyanate	5124-30-1	1 - 3

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.

If swallowed : Clean mouth with water and drink afterwards plenty of water.

Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed : None known.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : No data is available on the product itself.

Specific extinguishing methods : No data is available on the product itself.

Further information : Standard procedure for chemical fires.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Not applicable for product as supplied.

Environmental precautions : No special environmental precautions required.

Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : For personal protection see section 8.
No special handling advice required.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.

Materials to avoid : No special restrictions on storage with other products.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.045 mg/m3	NIOSH REL
		ST	0.02 ppm 0.18 mg/m3	NIOSH REL
		TWA	0.005 ppm	OSHA P0
		STEL	0.02 ppm	OSHA P0
4,4'-methylenedicyclohexyl diisocyanate	5124-30-1	TWA	0.005 ppm	ACGIH
		C	0.01 ppm 0.11 mg/m3	NIOSH REL
		C	0.01 ppm 0.11 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Remarks : For prolonged or repeated contact use protective gloves.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : amber, clear

Odor : slight

Odor Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Flash point : > 149 °C
Method: closed cup

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Upper explosion limit : No data is available on the product itself.

Lower explosion limit : No data is available on the product itself.

Vapor pressure	:	No data is available on the product itself.
Relative vapor density	:	1
Relative density	:	1.02 - 1.06
Density	:	No data is available on the product itself.
Solubility(ies)		
Water solubility	:	Water reactive
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Autoignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No hazards to be specially mentioned.
Conditions to avoid	:	No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

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

Acute inhalation toxicity - Product : Acute toxicity estimate: 0.61 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Ingredients:

4,4'-methylenedicyclohexyl diisocyanate:
Acute dermal toxicity : LD50 (Rat, male and female): > 7,000 mg/kg

Method: OECD Test Guideline 402

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Product:

Remarks: According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Serious eye damage/eye irritation

Product:

Remarks: According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

Respiratory or skin sensitization

Product:

Remarks: No data available

Assessment: No data available

Germ cell mutagenicity

Ingredients:

4,4'-methylenedicyclohexyl diisocyanate**:**

Genotoxicity in vitro : Concentration: 50 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Concentration: 28 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Concentration: 96 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : No data available

Carcinogenicity

No data available

Carcinogenicity - Assessment : No data available

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.

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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

Ingredients:

4,4'-methylenedicyclohexyl diisocyanate:

Effects on fertility : Species: Rat, male and female
Application Route: Inhalation
Target Organs: Respiratory Tract
Method: OECD Test Guideline 421

Ingredients:

4,4'-methylenedicyclohexyl diisocyanate:

Effects on fetal development : Species: Rat, female
Application Route: Inhalation
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Reproductive toxicity - Assessment : No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Repeated dose toxicity

Ingredients:

4,4'-methylenedicyclohexyl diisocyanate:
Species: Rat, male and female
NOEC: 3 mg/m3
Test atmosphere: dust/mist
Exposure time: 13 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 413

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Toxicity to fish : LC50: 1.8 mg/l
Exposure time: 48 h
Method: DIN 38412

4,4'-methylenedicyclohexyl diisocyanate:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 8.1 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Toxicity to daphnia and other aquatic invertebrates : EC50: 83.7 mg/l
Exposure time: 24 h
Method: DIN 38412

4,4'-methylenedicyclohexyl diisocyanate:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 8.3 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:
Toxicity to algae : EC50: 118.7 mg/l
Exposure time: 72 h

4,4'-methylenedicyclohexyl diisocyanate:
Toxicity to algae : EgC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 5 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 3 mg/l
Exposure time: 21 d
M-Factor (Chronic aquatic toxicity) : No data available

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:
Toxicity to bacteria : EC50: 263 mg/l
Exposure time: 3 h
Method: Directive 67/548/EEC, Annex V, B.15.

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
No data available

Persistence and degradability

Ingredients:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: Tested according to Directive 92/69/EEC.

4,4'-methylenedicyclohexyl diisocyanate:

Biodegradability : Inoculum: activated sludge
Concentration: 30 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.D.

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation	:	No data available
Partition coefficient: n-octanol/water	:	No data available

Mobility in soil

Mobility	:	No data available
Distribution among environmental compartments	:	No data available
Stability in soil	:	No data available

Other adverse effects

Environmental fate and pathways	:	No data available
Results of PBT and vPvB assessment	:	No data available
Endocrine disrupting potential	:	No data available
Adsorbed organic bound halogens (AOX)	:	No data available

Hazardous to the ozone layer

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 - Product	:	There is no data available for this product.
Global warming potential (GWP)	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	:	Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA
Not regulated as a dangerous good

IMDG
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

DOT Classification
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

TSCA - 5(a) Significant New Use Rule List of Chemicals : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know

SARA 311/312 Hazards : No SARA Hazards

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

4,4'-methylenedicyclohexyl diisocyanate	5124-30-1	2.157 %
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	6.334 %

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 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Pennsylvania Right To Know

Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-	119185-07-8	90 - 100 %

butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet		
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	5 - 10 %

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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

CH INV	:	The mixture contains substances listed on the Swiss Inventory
	:	benzoyl chloride
TSCA	:	On TSCA Inventory
DSL	:	This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
	:	Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
	:	Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	Not in compliance with the inventory
	:	Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet
PICCS	:	Not in compliance with the inventory
	:	Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet
IECSC	:	Low volume exemption
	:	Oxirane, methyl-, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,4-butanediyl), 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimet

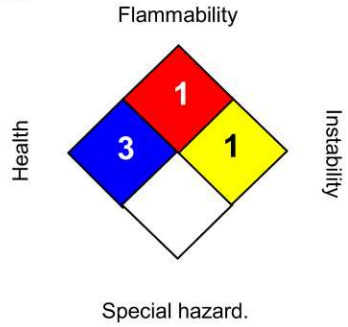
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	1

0 = not significant, 1 =Slight,

2 = Moderate, 3 = High

4 = Extreme, * = Chronic

Revision Date : 08/26/2015

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.

REN® 6442 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/13/2017	400001012690	Date of first issue: 12/13/2017

SECTION 1. IDENTIFICATION

Product name : REN® 6442 US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)
Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : MSDS@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Component of a Polyurethane System.
Component of a Polyurethane System.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Oral) : Category 4

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 2

Reproductive toxicity : Category 1B

Specific target organ toxicity - single exposure (Oral) : Category 2 (Liver)

Specific target organ toxicity - repeated exposure (Oral) : Category 1 (Liver)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney)

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
H371 May cause damage to organs (Liver) if swallowed.
H372 Causes damage to organs (Liver) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
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.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
benzyl butyl phthalate	85-68-7	70 - 90
4,4'-methylenebis(2-ethylaniline)	19900-65-3	20 - 25
dibutyl phthalate	84-74-2	0.1 - 0.25

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.

If inhaled : Consult a physician after significant exposure.
If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : If on skin, rinse well with water.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx)
Specific extinguishing methods	:	No data is available on the product itself.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept

upright to prevent leakage.
Observe label precautions.
Keep in properly labelled containers.

Further information on storage stability : Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
dibutyl phthalate	84-74-2	TWA	5 mg/m3	ACGIH
		TWA	5 mg/m3	OSHA Z-1

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : pink

Odour : No data is available on the product itself.

Odour Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Freezing point : No data is available on the product itself.

Melting point No data is available on the product itself.

Boiling point No data is available on the product itself.

Flash point	:	> 93 °C Method: estimated, closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Vapour pressure	:	No data is available on the product itself.
Relative vapour density	:	No data is available on the product itself.
Relative density	:	1.1
Density	:	No data is available on the product itself.
Solubility(ies)		
Water solubility	:	slightly soluble
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No hazards to be specially mentioned.
Conditions to avoid	:	None known.

Incompatible materials	:	None known.
Hazardous decomposition products	:	carbon dioxide carbon monoxide Nitrogen oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product	:	Acute toxicity estimate : 1,158 mg/kg Method: Calculation method
Acute inhalation toxicity - Product	:	Acute toxicity estimate: 5.6 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity - Product	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute toxicity (other routes of administration)	:	No data available

Skin corrosion/irritation

Components:

4,4'-methylenebis(2-ethylaniline):
Species: Rabbit
Assessment: No skin irritation
Method: OPPTS 870.2500
Result: No skin irritation

dibutyl phthalate:
Species: Rabbit
Assessment: No skin irritation
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Components:

4,4'-methylenebis(2-ethylaniline):
Species: Rabbit
Result: No eye irritation

Assessment: No eye irritation
Method: Acute Eye Irritation

dibutyl phthalate:
Species: Rabbit
Result: Normally reversible injuries
Assessment: No eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

4,4'-methylenebis(2-ethylaniline):
Exposure routes: Skin
Species: Humans
Result: The product is a skin sensitiser, sub-category 1A.

dibutyl phthalate:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

4,4'-methylenebis(2-ethylaniline):
Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: positive

dibutyl phthalate:
Genotoxicity in vitro : Concentration: 100 - 2000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Components:

4,4'-methylenebis(2-ethylaniline):
Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Somatic
Application Route: Intraperitoneal injection
Exposure time: 72 h
Dose: 56 - 140 mg/kg
Method: OECD Test Guideline 474
Result: Not classified due to inconclusive data.

Test Type: In vivo micronucleus test
Species: Mouse

Cell type: Somatic
Application Route: Intraperitoneal injection
Dose: 9.3 - 37 mg/kg
Method: OECD Test Guideline 474
Result: positive

dibutyl phthalate:
Genotoxicity in vivo : Exposure time: 13 Weeks
Dose: 163 - 4278 mg/kg
Result: negative

Components:

4,4'-methylenebis(2-ethylaniline):
Germ cell mutagenicity-Assessment : Positive result(s) from in vivo somatic cell mutagenicity tests supported by positive results from in vitro mutagenicity assays or chemical structure activity relationship to known germ cell mutagens

Germ cell mutagenicity-Assessment : No data available

Carcinogenicity

Components:

4,4'-methylenebis(2-ethylaniline):
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Dose: 9 - 10 mg/kg
Frequency of Treatment: 24 hour
Method: OECD Test Guideline 451
Result: positive

Components:

4,4'-methylenebis(2-ethylaniline):
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

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

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 component 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

Components:

dibutyl phthalate:
Effects on fertility : Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: No observed adverse effect level: 385 mg/kg body weight
Target Organs: Reproductive organs

Components:

dibutyl phthalate:
Effects on foetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: Lowest observed adverse effect level: 10,000 ppm
Result: Teratogenic effects

Species: Mouse
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 100 mg/kg body weight
Result: Teratogenic effects

Components:

benzyl butyl phthalate:
Reproductive toxicity - Assessment : Presumed human reproductive toxicant

dibutyl phthalate:
Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure

Components:

4,4'-methylenebis(2-ethylaniline):
Exposure routes: Ingestion
Target Organs: Liver
Assessment: May cause damage to organs.

STOT - repeated exposure

Components:

4,4'-methylenebis(2-ethylaniline):
Exposure routes: Ingestion
Target Organs: Liver
Assessment: Causes damage to organs through prolonged or repeated exposure.

Exposure routes: Ingestion
Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

4,4'-methylenebis(2-ethylaniline):
Species: Rat, male and female
LOAEL: 7.5 - 8 mg/kg/d
Application Route: Ingestion
Exposure time: 2,160 h
Number of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL: 90 mg/kg/d
Application Route: Skin contact
Exposure time: 2,160 h
Number of exposures: 5 d
Method: Subchronic toxicity

dibutyl phthalate:
Species: Rat, male and female
NOEC: 509 mg/m3
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 4 Weeks
Number of exposures: 6 h
Method: OECD Test Guideline 412

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

benzyl butyl phthalate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1 - 10 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 1 - 10 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.82 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50: 1.5 mg/l
Exposure time: 96 h

4,4'-methylenebis(2-ethylaniline):

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 20.6 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

dibutyl phthalate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.48 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Components:

benzyl butyl phthalate:

Toxicity to daphnia and other aquatic invertebrates : EC50: 1 - 10 mg/l
Exposure time: 48 h

4,4'-methylenebis(2-ethylaniline):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.35 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

dibutyl phthalate:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.99 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Gammarid Acute Toxicity Test

LC50 (Gammarus salinus (seawater shrimp)): 0.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Marine water
Method: Mysid Acute Toxicity Test

Components:

benzyl butyl phthalate:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 0.02 - 0.25 mg/l
Exposure time: 96 h
Test substance: Fresh water

IC50: 0.92 - 4.6 mg/l
Exposure time: 72 h

dibutyl phthalate:
Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 0.75 mg/l
Exposure time: 240 h
Test Type: static test
Test substance: Fresh water

Components:

benzyl butyl phthalate:
M-Factor (Acute aquatic toxicity) : 10

4,4'-methylenebis(2-ethylaniline):
M-Factor (Acute aquatic toxicity) : 1

dibutyl phthalate:
M-Factor (Acute aquatic toxicity) : 1

Components:

benzyl butyl phthalate:
Toxicity to fish (Chronic toxicity) : NOEC: 0.14 - 0.74 mg/l

dibutyl phthalate:
Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.1 mg/l
Exposure time: 99 d

Components:

benzyl butyl phthalate:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50 (Daphnia magna (Water flea)): 0.97 mg/l
Exposure time: 48 hrs

4,4'-methylenebis(2-ethylaniline):

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.00525 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211

dibutyl phthalate:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia pulex (Water flea)): 0.1 mg/l Exposure time: 10 d

Components:

4,4'-methylenebis(2-ethylaniline):

M-Factor (Chronic aquatic toxicity)	:	10

Components:

benzyl butyl phthalate:

Toxicity to microorganisms	:	IC50: > 2.8 mg/l

dibutyl phthalate:

Toxicity to microorganisms	:	EC50 (Bacteria): 2.2 mg/l Exposure time: 24 h

Components:

dibutyl phthalate:

Toxicity to soil dwelling organisms	:	LC50: 10 mg/kg Exposure time: 504 h NOEC: 0.5 mg/kg Exposure time: 504 h

Components:

dibutyl phthalate:

Plant toxicity	:	NOEC: 200 mg/l Exposure time: 3 Weeks Test substance: Natural EC50: 387 mg/kg Exposure time: 168 h Method: Terrestrial Plants Test: Seedling Emergence and Seedling Growth Test

Components:

dibutyl phthalate:

Sediment toxicity	:	(Gammarus pulex (Amphipod)): 826 mg/kgsedimentdw Study: Acute Test Type: Other guidelines Water: Fresh water Exposure duration: 10 d 100 mg/kgsedimentdw

Study: Chronic
Water: Marine water
Exposure duration: 8 Weeks

Components:

dibutyl phthalate:
Toxicity to terrestrial organisms : NOEC: 0.472 mg/kg
Exposure time: 360 h

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability

Components:

benzyl butyl phthalate:
Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

dibutyl phthalate:
Biodegradability : Inoculum: activated sludge
Concentration: 21.7 mg/l
Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.C.

Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: > 97 %
Exposure time: 21 d

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Components:

dibutyl phthalate:
Photodegradation : Test Type: Air
Rate constant: < .00001

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Components:

benzyl butyl phthalate:
Bioaccumulation : Bioconcentration factor (BCF): 12

dibutyl phthalate:
Bioaccumulation : Bioconcentration factor (BCF): 0.81
Test substance: Marine water

Bioconcentration factor (BCF): < 1

Components:

benzyl butyl phthalate:
Partition coefficient: n-octanol/water : log Pow: 4.91

dibutyl phthalate:
Partition coefficient: n-octanol/water : log Pow: 4.46 (30 °C)
pH: 5 - 8
Method: Partition coefficient

Mobility in soil

Mobility : No data available

Components:

benzyl butyl phthalate:
Distribution among environmental compartments : Koc: 4.7

dibutyl phthalate:
Distribution among environmental compartments : Koc: 1.4

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment	:	No data available
Endocrine disrupting potential	:	No data available
Adsorbed organic bound halogens (AOX)	:	No data available

Hazardous to the ozone layer

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 - Product	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.
Global warming potential (GWP)	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (BENZYL BUTYL PHTHALATE, DIETHYL METHYLENE DIANILINE)
Class	:	9
Packing group	:	III

Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BENZYL BUTYL PHTHALATE, DIETHYL METHYLENE DIANILINE)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Not applicable for product as supplied.

National Regulations

DOT Classification

UN/ID/NA number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BENZYL BUTYL PHTHALATE, DIETHYL METHYLENE DIANILINE)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	yes(BENZYL BUTYL PHTHALATE, DIETHYL METHYLENE DIANILINE)
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).

SECTION 15. REGULATORY INFORMATION

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
benzyl butyl phthalate	85-68-7	100	130
dibutyl phthalate	84-74-2	10	6527

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Respiratory or skin sensitisation
Germ cell mutagenicity

Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

California Prop. 65

WARNING: This product can expose you to chemicals including benzyl butyl phthalate, dibutyl phthalate, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

CH INV	:	The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

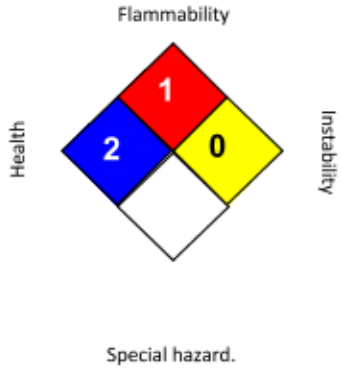
TSCA - 5(a) Significant New Use Rule List of Chemicals
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HEALTH	*	3
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.

Revision Date	:	12/13/2017
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN

PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.