SECTION 1. IDENTIFICATION

Product name	:	NEXTEL-Härter / Hardener 6018 farblos / transparent
Product number	:	4151800000000

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 3
Eye irritation	:	Category 2A
Respiratory sensitization	:	Category 1
Skin sensitization	:	Category 1
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :
H226 Flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.

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.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
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:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/

attention.
P337 + P313 If eye irritation persists: 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 disposal 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)
aromatic polyisocyanate	53317-61-6	>= 40 - <= 100
n-butyl acetate	123-86-4	>= 25 - < 40
2-methoxy-1-methylethyl acetate	108-65-6	>= 5 - < 12.5
m-tolylidene diisocyanate	26471-62-5	>= 0.25 - < 0.5

Actual concentration is withheld as a trade secret

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
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 excluded. Preparation may charge electrostatically: always use earthing leads whentransferring 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 isnot 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 atmo-

spheric humidityor water: CO2 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
n-butyl acetate	123-86-4	TWA	50 ppm	CR OEL
	Further information: Eye irritation, Upper Respiratory Tract irritation			
		STEL	150 ppm	CR OEL
	Further information: Eye irritation, Upper Respiratory Tract irritation			
		TWA	150 ppm 713 mg/m3	CA AB OEL
		STEL	200 ppm 950 mg/m3	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	150 ppm 713 mg/m3	CA QC OEL
		STEV	200 ppm 950 mg/m3	CA QC OEL
		VLE-PPT	150 ppm	NOM-010-STPS-2014
		VLE-CT	200 ppm	NOM-010-STPS-2014
		TWA	150 ppm 710 mg/m3	NIOSH REL
		ST	200 ppm 950 mg/m3	NIOSH REL
		TWA	150 ppm 710 mg/m3	OSHA Z-1
		TWA	150 ppm 710 mg/m3	OSHA P0
		STEL	200 ppm 950 mg/m3	OSHA P0
		TWA	50 ppm	ACGIH
		STEL	150 ppm	ACGIH

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/m3	CA ON OEL
		TWA	50 ppm	US WEEL
m-tolylidene diisocyanate	26471-62-5	TWA (Inhalable fraction and vapour)	0.001 ppm	CR OEL
	Further information: Confirmed animal carcinogen, Risk of cutaneous absorption, Irritation, Sensitisation, Dermal Sensitization, Sensibilizante respiratorio			
		STEL (Inhalable fraction and vapour)	0.005 ppm	CR OEL
	Further information: Confirmed animal carcinogen, Risk of cutaneous absorption, Irritation, Sensitisation, Dermal Sensitization, Sensibilizante respiratorio			
		TWAEV	0.005 ppm 0.036 mg/m3	CA QC OEL
		STEV	0.02 ppm 0.14 mg/m3	CA QC OEL
		C	0.02 ppm 0.14 mg/m3	OSHA Z-1
		TWA (Inhalable fraction and vapor)	0.001 ppm	ACGIH
		STEL (Inhalable fraction and vapor)	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.04 mg/m3	CA AB OEL
		(c)	0.02 ppm 0.1 mg/m3	CA AB OEL
		TWA	0.005 ppm 0.04 mg/m3	OSHA P0
		STEL	0.02 ppm 0.15 mg/m3	OSHA P0
		TWA	0.005 ppm	CA ON OEL
		C	0.02 ppm	CA ON OEL
		VLE-PPT	0.005 ppm	NOM-010-STPS-2014
		VLE-CT	0.02 ppm	NOM-010-STPS-2014

Biological occupational exposure limits

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

m-tolylidene diisocyanate	26471-62-5	toluene diamine	Urine	End of shift	5 µg/g creatinine	ACGIH BEI
		toluene diamine	Urine	End of shift	5 µg/g creatinine	CR BEI

Engineering measures : Provide adequate ventilation. Where reasonably practicable this shoud 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 areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask(it should be MHSA/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
pH	:	Not applicable
Boiling point/boiling range	:	ca. 248 °F / 120 °C
Flash point	:	86 °F / 30 °C Method: ISO 13736
Upper explosion limit / Upper flammability limit	:	10.0 %(V)
Lower explosion limit / Lower flammability limit	:	1.0 %(V)
Vapor pressure	:	100 hPa (122 °F / 50 °C)
Density	:	9.35 lb/gal (1.12 g/cm3) (68 °F / 20 °C)
Solubility(ies) Water solubility	:	insoluble
Autoignition temperature	:	> 752 °F / > 400 °C
Viscosity Flow time	:	> 66 s Cross section: 4 mm Method: DIN 53211 > 44 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 dioxiode, oxides of nitrogen, hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

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

Acute toxicity estimate: 23.94 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Components:

m-tolylidene diisocyanate:

Acute inhalation toxicity : LC50 (Rat, male and female): 0.107 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403

Skin corrosion/irritation

Components:

m-tolylidene diisocyanate:

Species : Rabbit
Result : Severe skin irritation

Respiratory or skin sensitization

Components:

m-tolylidene diisocyanate:

Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitization by skin contact.

Carcinogenicity

IARC	Group 2B: Possibly carcinogenic to humans m-tolylidene diisocyanate (toluene diisocyanates)	26471-62-5
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	Reasonably anticipated to be a human carcinogen m-tolylidene diisocyanate (Toluene Diisocyanates)	26471-62-5

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.
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 thightness 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 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.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1263
Proper shipping name	:	PAINT RELATED MATERIAL
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1263
Proper shipping name	:	PAINT RELATED MATERIAL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no

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	:	UN 1263
Proper shipping name	:	PAINT RELATED MATERIAL
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable liquids
Marine pollutant	:	no

Special precautions for user

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

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

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)
Serious eye damage or eye irritation
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:

m-tolylidene diisocyanate	26471-62-5	>= 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).
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).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

n-butyl acetate	123-86-4	>= 30 - < 50 %

VOC content excluding water : 3.68 lb/gal (400 g/l)
For the calculation of VOC values in this section all substances have been considered which fall under the definition of VOC according to 40 CFR 51.100. Additionally, the calculation complies with the requirements of SCAQMD Rule 1106.1, amended February 12, 1999.

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	>= 30 - < 50 %

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

n-butyl acetate	123-86-4	>= 30 - < 50 %

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

n-butyl acetate	123-86-4

Pennsylvania Right To Know

n-butyl acetate	123-86-4
m-tolylidene diisocyanate	26471-62-5

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Prop. 65

WARNING: This product can expose you to chemicals including m-tolylidene diisocyanate, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

n-butyl acetate	123-86-4

California Permissible Exposure Limits for Chemical Contaminants

n-butyl acetate	123-86-4
2-methoxy-1-methylethyl acetate	108-65-6

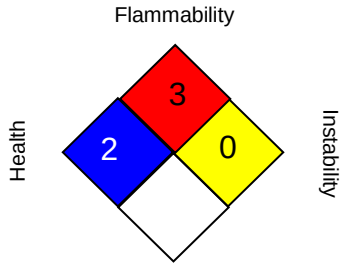
The ingredients of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

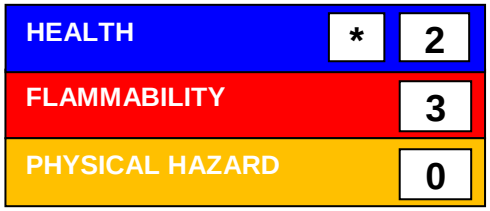
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



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 HazardousSlightly 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
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.
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 AB OEL / (c)	:	ceiling occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA ON OEL / C	:	Ceiling Limit (C)
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value
CR OEL / TWA	:	Time weighted average 8-hr value
CR OEL / STEL	:	Short term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
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
OSHA Z-1 / C	:	Ceiling
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 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 : 06/27/2020

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