

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

Recycled N-Methyl Pyrrolidone

Product Code

Not available.

Synonyms

Not available.

Product Use

Industrial Solvent. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

Emerald Services Inc.
1825 Alexander Avenue
Tacoma, WA 98421

Phone: 1-206-832-3225

Emergency Phone: 1-800-424-9300 (CHEMTREC - #7619)

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Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Flammable Liquids - Category 4

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

Reproductive Toxicity - Category 1

Specific Target Organ Toxicity - Single Exposure - Category 3

Specific Target Organ Toxicity - Repeated Exposure - Category 2 (central nervous system)

GHS Label Elements

Symbol(s)



Signal Word

Danger

Hazard Statement(s)

Combustible liquid.

Causes skin irritation and serious eye irritation.

May damage fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

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Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flame/hot surfaces - No smoking. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling.

Response

In case of fire: Use water spray, fog, or regular foam. IF exposed or concerned: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Rinse mouth.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
872-50-4	1-Methyl-2-pyrrolidone	99-100
67-64-1	Acetone	0.1-3
78-93-3	Methyl ethyl ketone	0.1-3
108-88-3	Toluene	0.1-3
7732-18-5	Water	0-3

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Most Important Symptoms/Effects

Acute

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

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Delayed

May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. May cause damage to central nervous system.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use water spray, fog or regular foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in re-ignition.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Special Hazards Arising from the Chemical

Combustible liquid and vapor. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back. Heated containers may rupture or be thrown into the air. Empty product containers may retain product residue and can be dangerous. Product may be sensitive to static discharge, which could result in fire or explosion.

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Potential decomposition gases have not been fully determined but may include: oxides of carbon, oxides of nitrogen

Fire Fighting Measures

Move container from fire area if it can be done without risk. Keep storage containers cool with water spray.

Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Avoid breathing vapor or mist. Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal. Minimum Personal Protective Equipment should be Level B: triple gloves (rubber gloves and nitrile gloves, over latex gloves) chemically resistant suit and boots, hard-hat, and Self Contained Breathing Apparatus. Spillage may cause SLIPPERY CONDITIONS (especially when wet).

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe

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vapor or mist. Use in a well ventilated area. Avoid contact with eyes Skin clothing shoes. Wash thoroughly after handling. Do not smoke when using this product. Use Personal Protective equipment as required.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Store in a dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See SECTION 14: TRANSPORTATION INFORMATION for Packing Group information.

Incompatible Materials

strong oxidizers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION
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Component Exposure Limits

1-Methyl-2-pyrrolidone	872-50-4
Acetone	67-64-1
ACGIH:	250 ppm TWA; 500 ppm STEL
NIOSH:	250 ppm TWA ; 590 mg/m3 TWA; 2500 ppm IDLH (10% LEL)
OSHA (US):	1000 ppm TWA ; 2400 mg/m3 TWA
Methyl ethyl ketone	78-93-3
ACGIH:	200 ppm TWA; 300 ppm STEL
NIOSH:	200 ppm TWA ; 590 mg/m3 TWA; 300 ppm STEL ; 885 mg/m3 STEL 3000 ppm IDLH
OSHA (US):	200 ppm TWA ; 590 mg/m3 TWA
Toluene	108-88-3
ACGIH:	20 ppm TWA
NIOSH:	100 ppm TWA ; 375 mg/m3 TWA; 150 ppm STEL ; 560 mg/m3 STEL 500 ppm IDLH
OSHA (US):	200 ppm TWA; 300 ppm Ceiling

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

1-Methyl-2-pyrrolidone (872-50-4)

100 mg/l Medium: urine Time: end of shift Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone

Acetone (67-64-1)

25 mg/l Medium: urine Time: end of shift Parameter: Acetone (nonspecific)

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Methyl ethyl ketone (78-93-3)

2 mg/l Medium: urine Time: end of shift Parameter: MEK (nonspecific)

Toluene (108-88-3)

0.02 mg/l Medium: blood Time: prior to last shift of workweek Parameter: Toluene ; 0.03 mg/l Medium: urine Time: end of shift Parameter: Toluene ; 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

Respiratory Protection

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

Skin Protection/Glove Recommendations

To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing. Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended.

Protective Materials

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required. Safety glasses. Gloves. Lab coat or apron.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid	Physical State	Liquid
Odor	Characteristic	Color	Clear, colorless
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	202 °C (396 °F)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	0.03 (Butyl acetate = 1)	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	93 °C [Closed Cup.] (199 °F)
Lower Explosive Limit	1.3 vol%	Decomposition temperature	Not available
Upper Explosive Limit	9.5 vol%	Vapor Pressure	0.3 mmHg @ 68°F °C (20° C)
Vapor Density (air=1)	3.4 (Air = 1)	Specific Gravity (water=1)	1.026

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Water Solubility	(Complete)	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Physical Form	liquid.	Volatility	100 wt%
Molecular Weight	Not available		

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures. Contact with water or moist air may form ethanol.

Possibility of Hazardous Reactions

Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials.

Incompatible Materials

strong oxidizers.

Hazardous decomposition products

Not applicable under normal conditions of use and storage. See also SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

May be harmful if inhaled. May cause respiratory irritation. High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects.

Skin Contact

Causes skin irritation.

Eye Contact

Causes serious eye irritation.

Ingestion

May be harmful if swallowed. May cause, throat irritation, nausea, vomiting, central nervous system effects as noted for inhalation. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

1-Methyl-2-pyrrolidone (872-50-4)

Oral LD50 Rat 3914 mg/kg; Dermal LD50 Rabbit 8 g/kg; Inhalation LC50 Rat >5.1 mg/L 4 h

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg; Dermal LD50 Rabbit >15700 mg/kg; Inhalation LC50 Rat 50100 mg/m³ 8 h

Methyl ethyl ketone (78-93-3)

Oral LD50 Rat 2483 mg/kg; Dermal LD50 Rabbit 5000 mg/kg; Inhalation LC50 Rat 11700 ppm 4 h

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Toluene (108-88-3)

Oral LD50 Rat 2600 mg/kg; Dermal LD50 Rabbit 12000 mg/kg; Inhalation LC50 Rat 12.5 mg/L 4 h

Water (7732-18-5)

Oral LD50 Rat >90 mL/kg

Product Toxicity Data

Acute Toxicity Estimate

Dermal	> 2000 mg/kg
Oral	> 2000 mg/kg

Immediate Effects

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Delayed Effects

May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. May cause central nervous system effects.

Irritation/Corrosivity Data

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

Acetone	67-64-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
Toluene	108-88-3
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999] ; Monograph 47 [1989] (Group 3 (not classifiable))

Germ Cell Mutagenicity

Experimental evidence suggests that this product does not cause mutagenesis.

Tumorigenic Data

No data available

Reproductive Toxicity

N-Methyl-2-pyrrolidinone has demonstrated animal effects of reproductive toxicity. N-Methyl-2-pyrrolidinone has demonstrated animal effects of teratogenicity.

Specific Target Organ Toxicity - Single Exposure

Respiratory system.

Specific Target Organ Toxicity - Repeated Exposure

Central nervous system.

Aspiration hazard

No data available for this product.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

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Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

May cause long-term adverse effects in the environment.

Component Analysis - Aquatic Toxicity

1-Methyl-2-pyrrolidone	872-50-4
Fish:	LC50 96 h <i>Lepomis macrochirus</i> 832 mg/L [static]; LC50 96 h <i>Pimephales promelas</i> 1072 mg/L [static]; LC50 96 h <i>Poecilia reticulata</i> 1400 mg/L [static]
Algae:	EC50 72 h <i>Desmodesmus subspicatus</i> >500 mg/L IUCLID
Invertebrate:	EC50 48 h <i>Daphnia magna</i> 4897 mg/L IUCLID
Acetone	67-64-1
Fish:	LC50 96 h <i>Oncorhynchus mykiss</i> 4.74 - 6.33 mL/L; LC50 96 h <i>Pimephales promelas</i> 6210 - 8120 mg/L [static]; LC50 96 h <i>Lepomis macrochirus</i> 8300 mg/L
Invertebrate:	EC50 48 h <i>Daphnia magna</i> 10294 - 17704 mg/L [Static] EPA ; EC50 48 h <i>Daphnia magna</i> 12600 - 12700 mg/L IUCLID
Methyl ethyl ketone	78-93-3
Fish:	LC50 96 h <i>Pimephales promelas</i> 3130 - 3320 mg/L [flow-through]
Invertebrate:	EC50 48 h <i>Daphnia magna</i> >520 mg/L IUCLID ; EC50 48 h <i>Daphnia magna</i> 5091 mg/L IUCLID ; EC50 48 h <i>Daphnia magna</i> 4025 - 6440 mg/L [Static] EPA
Toluene	108-88-3
Fish:	LC50 96 h <i>Pimephales promelas</i> 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h <i>Pimephales promelas</i> 12.6 mg/L [static]; LC50 96 h <i>Oncorhynchus mykiss</i> 5.89 - 7.81 mg/L [flow-through]; LC50 96 h <i>Oncorhynchus mykiss</i> 14.1 - 17.16 mg/L [static]; LC50 96 h <i>Oncorhynchus mykiss</i> 5.8 mg/L [semi-static]; LC50 96 h <i>Lepomis macrochirus</i> 11 - 15 mg/L [static]; LC50 96 h <i>Oryzias latipes</i> 54 mg/L [static]; LC50 96 h <i>Poecilia reticulata</i> 28.2 mg/L [semi-static]; LC50 96 h <i>Poecilia reticulata</i> 50.87 - 70.34 mg/L [static]
Algae:	EC50 96 h <i>Pseudokirchneriella subcapitata</i> >433 mg/L IUCLID ; EC50 72 h <i>Pseudokirchneriella subcapitata</i> 12.5 mg/L [static] EPA
Invertebrate:	EC50 48 h <i>Daphnia magna</i> 5.46 - 9.83 mg/L [Static] EPA ; EC50 48 h <i>Daphnia magna</i> 11.5 mg/L IUCLID

Fish Toxicity

Not considered to be harmful to aquatic life.

Invertebrate Toxicity

No information available for the product.

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Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Other Toxicity

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable federal, state/regional and local laws and regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Emerald regarding proper recycling or disposal. This product, if discarded, is not expected to be a characteristic or listed hazardous waste.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Non-Bulk Packages (≤119 gal): Not regulated for transport.

Bulk Packages: Shipping Name: Combustible liquid, n.o.s (Contains: 1-Methyl-2-pyrrolidone)

UN/NA #: NA1993 **Hazard Class:** 3 **Packing Group:** III

Required Label(s): Combustible liquid

IATA Information:

Further information: Not regulated as dangerous goods.

IMDG Information:

Further information: Not regulated as dangerous goods.

TDG Information:

Further information: Not regulated as dangerous goods.

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

1-Methyl-2-pyrrolidone	872-50-4
IBC Code:	Category Y
Methyl ethyl ketone	78-93-3
IBC Code:	Category Z
Toluene	108-88-3
IBC Code:	Category Y

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Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

1-Methyl-2-pyrrolidone	872-50-4
SARA 313:	1 % de minimis concentration
TSCA 12b:	Section 5 , 1 % de minimis concentration; Section 6 , 1 % de minimis concentration
Acetone	67-64-1
CERCLA:	5000 lb final RQ ; 2270 kg final RQ
Methyl ethyl ketone	78-93-3
CERCLA:	5000 lb final RQ ; 2270 kg final RQ
Toluene	108-88-3
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ ; 454 kg final RQ

Chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

CAS-No.	Name	Percent by Weight
872-50-4	1-Methyl-2-pyrrolidone	99-100
108-88-3	Toluene	0.1-3

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Flammable; Reproductive Toxicity; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
1-Methyl-2-pyrrolidone	872-50-4	No	Yes	Yes	Yes	Yes
Acetone	67-64-1	Yes	Yes	Yes	Yes	Yes
Methyl ethyl ketone	78-93-3	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Warning! This product can expose you to chemicals including 1-Methyl-2-pyrrolidone, Toluene, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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1-Methyl-2-pyrrolidone	872-50-4
Repro/Dev. Tox	developmental toxicity , 6/15/2001
Toluene	108-88-3
Repro/Dev. Tox	developmental toxicity , 1/1/1991

Component Analysis - Inventory

1-Methyl-2-pyrrolidone (872-50-4)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No
KR - REACH CCA			MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
Yes			Yes	Yes	Yes	Yes	Yes	Yes

Acetone (67-64-1)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No
KR - REACH CCA			MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No			Yes	Yes	Yes	Yes	Yes	Yes

Methyl ethyl ketone (78-93-3)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No
KR - REACH CCA			MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
Yes			Yes	Yes	Yes	Yes	Yes	Yes

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Toluene (108-88-3)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No
KR - REACH CCA			MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
Yes			Yes	Yes	Yes	Yes	Yes	Yes

Water (7732-18-5)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	No	Yes	No
KR - REACH CCA			MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No			Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 2 Instability: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Regulatory review and update. Update to Sections 1 and 15.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL), KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK -

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Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Emerald assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.