

Safety Data Sheet

SDS ID: 89070

***** Section 1 - Identification *****

Material Name

CleanPerc Perchloroethylene (Dry Cleaning Grade)

Product Code

Not available.

Synonyms

Tetrachloroethene, 1,1,2,2-Tetrachloroethylene

Product Use

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

Restrictions on Use

THIS PRODUCT IS NOT FOR SALE OR USE IN THE STATE OF CALIFORNIA

Manufacturer Information

Clean Harbors Recycling Services of Ohio LLC
581 Milliken Drive SE
Hebron, Ohio 43025

Phone: 1-740-929-3532
www.cleanharbors.com

Emergency # 1-800-645-8265

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October 12, 2009

***** Section 2 - Hazard(s) Identification *****

Classification in accordance with Schedule 1 of Canada's Hazardous Products Regulations (HPR) (SOR/2015-17) and paragraph (d) of 29 CFR 1910.1200 in the United States

Skin Corrosion / Irritation, Category 2

Serious Eye Damage/Eye Irritation, Category 2B

Carcinogenicity, Category 2

Toxic to Reproduction, Category 2

Specific Target Organ Toxicity - Single Exposure, Category 1 (central nervous system, liver, and respiratory system)

Specific Target Organ Toxicity - Single Exposure, Category 3 (central nervous system)

Specific Target Organ Toxicity - Repeated Exposure, Category 1 (liver, nervous system, and respiratory system)

Specific Target Organ Toxicity - Repeated Exposure, Category 2 (kidneys)

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER!

Hazard Statement(s)

Causes skin and eye irritation

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Suspected of causing cancer and of damaging fertility or the unborn child
Causes damage to central nervous system, liver, and respiratory system.
May cause drowsiness and dizziness
Causes damage to liver, nervous system, and respiratory system through prolonged or repeated exposure.
May cause damage to kidneys through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Response

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

Storage

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

Disposal

Dispose in accordance with all applicable local regulations.

Hazard(s) Not Otherwise Classified

No additional information is available.

*** Section 3 - Composition / Information on Ingredients ***

CAS	Component	Percent
127-18-4	Perchloroethylene	99.5 – 99.9
108-88-3	Toluene	0 – 0.3
128-37-0	Phenol, 2,6-bis (1,1-dimethylethyl)-4-methyl-	0.2
7732-18-5	Water	<0.02

*** Section 4 - First Aid Measures ***

Description of Necessary 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. Take off contaminated clothing and wash it before reuse.

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. Do NOT induce vomiting. Rinse mouth. If vomiting occurs, keep head lower than hips to prevent aspiration. Never give anything by mouth to an unconscious person.

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Most Important Symptoms/Effects

Acute

Causes skin irritation, eye irritation, central nervous system damage, liver damage, and respiratory system damage. May cause central nervous system depression.

Delayed

Causes liver damage, nervous system damage, and respiratory system damage. May cause cancer, reproductive effects, and kidney damage.

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

IF exposed: Call a POISON CENTER or doctor/physician. Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-645-8245 for additional information.

* * * Section 5 - Fire-Fighting Measures * * *

Suitable Extinguishing Media

Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Specific Hazards Arising from the Chemical

This material will not burn.

Hazardous Combustion Products

Product itself does not burn, but may decompose upon heating to produce phosgene, halogenated compounds and carbon monoxide.

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.

Fire Fighting Measures

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

* * * Section 6 - Accidental Release Measures * * *

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment. Collect spillage.

Methods and Materials for Containment and Clean Up

Do not touch or walk through spilled product. Stop leak if you can do it without risk. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. 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 tool into a sealable container for disposal.

Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product.

Also see **Section 15: Regulatory Information**.

* * * Section 7 - Handling and Storage * * *

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use clean tools. Do not breathe vapor or mist. Use in a well ventilated area. Do not get in eyes, on skin or clothing. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Avoid release to the environment.

Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry well-ventilated place. Store locked up. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Empty product containers may retain product residue and can be dangerous. See **Section 14: Transportation Information** for Packing Group information.

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Incompatibilities

Avoid acids, alkalis, oxidizing agents, and reactive metals.

***** Section 8 - Exposure Controls / Personal Protection *****

Component Exposure Limits

Perchloroethylene	127-18-4
ACGIH:	25 ppm TWA; 100 ppm STEL
NIOSH:	150 ppm IDLH
OSHA (US):	100 ppm TWA; 200 ppm Ceiling
Alberta	25 ppm TWA ; 170 mg/m3 TWA; 100 ppm STEL ; 678 mg/m3 STEL
British Columbia; Northwest Territories; Nunavut; Ontario; Prince Edward Island; Saskatchewan	25 ppm TWA; 100 ppm STEL
Manitoba	25 ppm TWA
New Brunswick; Quebec	25 ppm TWA ; 170 mg/m3 TWA; 100 ppm STEL ; 685 mg/m3 STEL
Yukon	100 ppm TWA ; 670 mg/m3 TWA; 150 ppm STEL ; 1000 mg/m3 STEL Skin notation
Toluene	108-88-3
ACGIH:	20 ppm TWA
NIOSH:	100 ppm TWA; 375 mg/m3 TWA 150 ppm STEL; 560 mg/m3 STEL
OSHA (US):	200 ppm TWA; 300 ppm Ceiling
Alberta	50 ppm TWA ; 188 mg/m3 TWA; Substance may be readily absorbed through intact skin
British Columbia, Nova Scotia, Ontario, Prince Edward Island	20 ppm TWA
Manitoba	20 ppm TWA; Skin - potential for cutaneous absorption

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New Brunswick	50 ppm TWA ; 188 mg/m ³ TWA; Skin - potential for cutaneous absorption
Northwest Territories, Nunavut	50 ppm TWA; 60 ppm STEL; Skin notation
Quebec	50 ppm TWAEV ; 188 mg/m ³ TWAEV; Skin designation
Saskatchewan	50 ppm TWA; 60 ppm STEL; Potentially harmful after absorption through skin or mucous membranes
Yukon	100 ppm TWA; 375 mg/m ³ TWA 150 ppm STEL; 560 mg/m ³ STEL; Skin notation

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

Perchloroethylene (127-18-4)

3 ppm Medium: end-exhaled air Time: prior to shift Parameter: Tetrachloroethylene ; 0.5 mg/l Medium: blood Time: prior to shift Parameter: Tetrachloroethylene

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

Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Do not use N-rated respirators. Protection provided by air purifying respirators is limited. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Glove Recommendations

Where skin contact is likely, wear chemical impervious protective gloves; use of natural rubber (latex) or equivalent gloves is not recommended. 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.

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, and Lab coat or apron.

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*** Section 9 - Physical & Chemical Properties ***

Appearance/Odor : Liquid, clear and colorless, mild ether like odor.	pH: Not applicable
Boiling Point: 250°F (121°C)	Odor Threshold: Not available
Solubility (H2O): Insoluble	Melting Point: -2°F (-19°C)
Density: Not available	Specific Gravity: 1.62 (water = 1)
Evaporation Rate: 2.8 (butyl acetate = 1)	Octanol/H2O Coeff. Not available
LFL: Not applicable	Auto Ignition Temperature: Not applicable
UFL: Not applicable	Flash Point: Not available
Vapor Pressure: 14 mmHg at 68°F (20°C)	Viscosity: Not available
	Vapor Density: 5.7 (air = 1)

*** Section 10 - Stability & Reactivity ***

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

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

Conditions To Avoid

Avoid heat, sparks, or flame. Avoid contact with incompatible materials.

Incompatible Materials

Avoid acids, alkalis, oxidizing agents, and reactive metals.

Hazardous Decomposition Products

None under normal temperatures and pressures.

*** Section 11 - Toxicological Information ***

Information on Likely Routes of Exposure

Inhalation

Cancer, reproductive effects, irritation, nausea, vomiting, headache, dizziness, loss of coordination, numbness, liver damage, kidney damage.

Skin Contact

Causes skin irritation.

Eye Contact

Causes eye irritation.

Ingestion

May cause irritation, nausea, vomiting, dizziness, drowsiness, unconsciousness, coma, 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:

Perchloroethylene (127-18-4)

Oral LD50 Rat 2629 mg/kg; Inhalation LC50 Rat 27.8 mg/L 4 h

Toluene (108-88-3)

Dermal LD50 Rabbit 8390 mg/kg; Inhalation LC50 Rat 12.5 mg/L 4 h; Oral LD50 Rat 636 mg/kg

Product Toxicity Data

Acute Toxicity Estimate

No data available.

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Immediate Effects

Causes, skin irritation, eye irritation, central nervous system damage, liver damage, respiratory system damage, central nervous system depression.

Delayed Effects

Prolonged or repeated inhalation may cause toxic effects as noted under Acute Effects for inhalation. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis). Contains material which may cause reproductive effects. May cause liver damage, nervous system damage, respiratory system damage, kidney damage.

Irritation/Corrosivity Data

Causes skin irritation and eye irritation.

Respiratory Sensitization

Based on best current information, there is no known human sensitization associated with this product.

Dermal Sensitization

Based on best current information, there is no known human sensitization associated with this product.

Component Carcinogenicity

Perchloroethylene	127-18-4
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC:	Monograph 106 [2014] ; Monograph 63 [1995] ; Supplement 7 [1987] (Group 2A (probably carcinogenic to humans))
NTP:	Reasonably Anticipated To Be A Human Carcinogen
DFG:	Category 3B (could be carcinogenic for man)
OSHA:	Present
NIOSH:	Potential occupational 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

Based on best current information perchloroethylene is not a mutagen.

Tumorigenic Data

Perchloroethylene has demonstrated experimental effects of teratogenicity.

Reproductive Toxicity

Perchloroethylene has demonstrated animal effects of reproductive toxicity.

Specific Target Organ Toxicity - Single Exposure

Respiratory system, central nervous system, liver.

Specific Target Organ Toxicity - Repeated Exposure

Respiratory system. liver, nervous system, kidneys.

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing cardiovascular, liver, kidney, 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 ***
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Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

Perchloroethylene	127-18-4
Fish:	LC50 96 h Pimephales promelas 12.4 - 14.4 mg/L [flow-through]; LC50 96 h Pimephales promelas 8.6 - 13.5 mg/L [static]; LC50 96 h Lepomis macrochirus 11 - 15 mg/L [static]; LC50 96 h Oncorhynchus mykiss 4.73 - 5.27 mg/L [flow-through]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >500 mg/L EPA
Invertebrate:	EC50 48 h Daphnia magna 6.1 - 9 mg/L [Static] EPA
Toluene	108-88-3
Fish:	LC50 96 h Pimephales promelas 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h Pimephales promelas 12.6 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.89 - 7.81 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 14.1 - 17.16 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.8 mg/L [semi-static]; LC50 96 h Lepomis macrochirus 11 - 15 mg/L [static]; LC50 96 h Oryzias latipes 54 mg/L [static]; LC50 96 h Poecilia reticulata 28.2 mg/L [semi-static]; LC50 96 h Poecilia reticulata 50.87 - 70.34 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >433 mg/L IUCLID ; EC50 72 h Pseudokirchneriella subcapitata 12.5 mg/L [static] EPA
Invertebrate:	EC50 48 h Daphnia magna 5.46 - 9.83 mg/L [Static] EPA ; EC50 48 h Daphnia magna 11.5 mg/L IUCLID

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 additional information is available.

*** Section 13 - Disposal Considerations ***

Disposal Methods

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product. Contact Clean Harbors regarding proper recycling or disposal.

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*** Section 14 - Transport Information ***

US DOT Information:

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN/NA #: UN1897

Packing Group: III

Required Label(s): 6.1

Marine pollutant

IATA Information:

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN#: UN1897

Packing Group: III

Required Label(s): 6.1

Marine pollutant

IMDG Information:

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN#: UN1897

Packing Group: III

Required Label(s): 6.1

Marine pollutant

TDG Information:

Shipping Name: TETRACHLOROETHYLENE

Hazard Class: 6.1

UN#: UN1897

Packing Group: III

Required Label(s): 6.1

Marine pollutant

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.

Perchloroethylene	127-18-4
IBC Code:	Category Y
Toluene	108-88-3
IBC Code:	Category Y

Further information

ERG: 160, Reference: North American Emergency Response Guidebook

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*** Section 15 - Regulatory Information ***

Canada Regulations

CEPA - Priority Substances List

Ethene,tetrachloro-	127-18-4
	Priority Substance List 1 (substance considered toxic)
Toluene	108-88-3
	Priority Substance List 1 (substance not considered toxic)

Ozone Depleting Substances

None of this product's components are on the list.

Council of Ministers of the Environment - Soil Quality Guidelines

Ethene,tetrachloro-	127-18-4
Residential and Parkland	0.2 mg/kg (dry weight)
Toluene	108-88-3
Residential and Parkland	<p>0.37 mg/kg coarse (surface (<=1.5 m); 0.08 mg/kg fine (surface (<=1.5 m); 0.37 mg/kg coarse (subsoil (>1.5 m); 0.08 mg/kg fine (subsoil (>1.5 m), Free-phase formation, a circumstance deemed unacceptable by many jurisdictions, occurs when a substance exceeds its solubility limit in soil water. The concentration at which this occurs is dependent on soil texture, porosity, and aeration porosity. Under the assumptions used for this guideline, at concentrations greater than 660 mg/kg in coarse soil, or 680 mg/kg in fine soil, formation of free-phase Toluene will likely occur)</p> <p>0.08 mg/kg fine (surface (<=1.5 m), Free-phase formation, a circumstance deemed unacceptable by many jurisdictions, occurs when a substance exceeds its solubility limit in soil water. The concentration at which this occurs is dependent on soil texture, porosity, and aeration porosity. Under the assumptions used for this guideline, at concentrations greater than 660 mg/kg in coarse soil, or 680 mg/kg in fine soil, formation of free-phase Toluene will likely occur);</p> <p>0.37 mg/kg coarse (subsoil (>1.5 m), Free-phase formation, a circumstance deemed unacceptable by many jurisdictions, occurs when a substance exceeds its solubility limit in soil water. The concentration at which this occurs is dependent on soil texture, porosity, and aeration porosity. Under the assumptions used for this guideline, at concentrations greater than 660 mg/kg in coarse soil, or 680 mg/kg in fine soil, formation of free-phase Toluene will likely occur);</p> <p>0.08 mg/kg fine (subsoil (>1.5 m), Free-phase formation, a circumstance deemed unacceptable by many jurisdictions, occurs when a substance exceeds its solubility limit in soil water. The concentration at which this occurs is dependent on soil texture, porosity, and</p>

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	aeration porosity. Under the assumptions used for this guideline, at concentrations greater than 660 mg/kg in coarse soil, or 680 mg/kg in fine soil, formation of free-phase Toluene will likely occur)
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Council of Ministers of the Environment - Water Quality Guidelines

Toluene	108-88-3
Marine aquatic life	215 µg/L

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.

Perchloroethylene	127-18-4
SARA 313:	0.1 % de minimis concentration
CERCLA:	100 lb final RQ ; 45.4 kg final RQ
Toluene	108-88-3
SARA 313	1 % de minimis concentration
CERCLA	1000 lb final RQ; 454 kg final RQ

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

Carcinogenicity; 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
Perchloroethylene	127-18-4	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes

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

THIS PRODUCT IS NOT FOR SALE OR USE IN THE STATE OF CALIFORNIA.

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Component Analysis - Inventory Perchloroethylene (127-18-4)

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	VN (Draft)
Yes			Yes	Yes	Yes	Yes	Yes	Yes

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	VN (Draft)
Yes			Yes	Yes	Yes	Yes	Yes	Yes

*** Section 16 - Other Information ***

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0

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

Summary of Changes

2021/12: Update to composition and Section 13.

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; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - 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

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Dangerous Goods; 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).

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, Clean Harbors 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.