

CHO-LUBE® E117

54-01-E117-0200

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **CHO-LUBE® E117**

Product Code(s) : 54-01-E117-0200

Recommended use of the chemical and restrictions on use

: Conductive silicone grease.
No restrictions on use known.

Chemical family : Mixture of: Metal compounds; Siloxanes

SDS number : PHC-051 EU

Name, address, and telephone number of the manufacturer:

Parker Hannifin Corp.

Chomerics Division
77 Dragon Court
Woburn, MA, USA
01888

Manufacturer's Telephone # : (781) 935-4580

24 Hr. Emergency Tel # : INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Silver paste. Mild odor.

Most important hazards:

May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure by inhalation. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

Harmful to aquatic life with long lasting effects. See Section 12 for more environmental information.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Skin sensitization - Category 1

Carcinogenicity - Category 2

Specific target organ toxicity, repeated exposure - Category 1

Label elements

Hazard pictogram(s)



Signal Word
DANGER!

Hazard statement(s)

May cause an allergic skin reaction.

Suspected of causing cancer.

Causes damage to organs through prolonged or repeated exposure.

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Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust or fume.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:

May burn if heated to extreme temperatures. Toxic fumes, gases or vapors may evolve on burning. May be mildly irritating to skin, eyes and respiratory system. May cause gastrointestinal irritation. Inhalation of fumes may result in metal fume fever, a flu-like illness. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Nickel	Elemental nickel	7440-02-0	60.0 - 70.0
silver	Silver metal Argentum	7440-22-4	10.0 - 20.0
Octamethyltrisiloxane	Not available.	107-51-7	1.0 - 3.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret as allowed by 29CFR1910.1200.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do NOT induce vomiting. Never give anything by mouth to a person who is unconscious or is having convulsions. IF exposed or concerned: Get medical attention/advice.
- Inhalation* : Move to fresh air in case of accidental inhalation of vapors. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. IF exposed or concerned: Get medical attention/advice.
- Skin contact* : IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids. IF exposed or concerned: Get medical attention/advice.

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Most important symptoms and effects, both acute and delayed

- : May cause severe skin sensitization with allergic contact dermatitis symptoms such as swelling, rash and eczema.
- Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
- Causes damage to organs through prolonged or repeated exposure by inhalation. Contains: Nickel. Nickel compounds have been shown to cause chronic lung inflammation and lung fibrosis through inhalation. These effects were serious and potentially irreversible.
- Symptoms of excessive exposure may include increased respiratory rate, "blue" tinged (cyanosis) extremities, body and/or facial area, nausea, vomiting and coughing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
- Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing.
- Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness.
- Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : None known.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. However, may burn if exposed to extreme heat and flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes, gases or vapors may evolve on burning.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not classified as flammable.

Hazardous combustion products

- : Carbon oxides; Metal oxides; Formaldehyde; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Wear appropriate protective equipment. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Avoid release to the environment. Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use inert, non-combustible absorbents to assist the pick up of material. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): Nickel (100 lbs / 45.4 kg); silver (1000 lbs / 454 kg).

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

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.
Persons with recurrent skin eczema or sensitization problems should be excluded from working with this product. Once a person is sensitized, no further exposure to the material that caused the sensitization should be permitted.
Provide adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe dust or fume. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Empty containers retain residue and can be dangerous.

Conditions for safe storage : Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases

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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:			
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u> <u>STEL</u>
Nickel	1.5 mg/m ³ (inhalable)	N/Av	1 mg/m ³ N/Av
silver	0.1 mg/m ³ (dust and fume)	N/Av	0.01 mg/m ³ N/Av
Octamethyltrisiloxane	N/Av	N/Av	N/Av N/Av

Exposure controls

Ventilation and engineering measures

- : Provide adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear resistant clothing and boots.

Eye / face protection

- : Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment

- : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Do not breathe dust or fume. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice. Contaminated work clothing must not be allowed out of the workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Silver paste.

Odor : mild

Odor threshold : N/Av

pH : N/Av

Melting/Freezing point : N/Av

Initial boiling point and boiling range

- : > 152.6°C (307°F) (based on ingredients)

Flash point : 270°C (518°F)

Flashpoint (Method) : closed cup

Evaporation rate (BuAe = 1) : N/Av

Flammability (solid, gas) : Not applicable.

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Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties

: None known.

Explosive properties

: Not explosive

Vapor pressure

: N/Av

Vapor density

: N/Av

Relative density / Specific gravity

: 3.2

Solubility in water

: insoluble

Other solubility(ies)

: N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature

: N/Av

Decomposition temperature

: N/Av

Viscosity

: N/Av

Volatiles (% by weight)

: N/Av

Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Av

Flame projection length

: N/Av

Other physical/chemical comments

: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity

: Not normally reactive.

Chemical stability

: Stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid

: Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials

: Strong oxidizing agents; Strong acids; Strong bases

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation

: YES

Routes of entry skin & eye

: YES

Routes of entry Ingestion

: YES

Routes of exposure skin absorption

: YES

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Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness. Can be absorbed through skin.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing.

Potential Chronic Health Effects

- : None known or reported by the manufacturer.

Mutagenicity

- : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

- : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Carcinogenicity - Category 2. Suspected of causing cancer.
Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. Contains: Nickel. Nickel is classified as carcinogenic by IARC (group 2B), and NTP.

Reproductive effects & Teratogenicity

- : This product is not expected to cause reproductive or developmental effects.

Sensitization to material

- : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Skin sensitization - Category 1. May cause an allergic skin reaction.
May cause severe skin sensitization with allergic contact dermatitis symptoms such as swelling, rash and eczema. Contains: Nickel.
Not expected to be a respiratory sensitizer.

Specific target organ effects

- : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Specific target organ toxicity, repeated exposure - Category 1. Causes damage to organs through prolonged or repeated exposure.
Contains: Nickel. Nickel compounds have been shown to cause chronic lung inflammation and lung fibrosis through inhalation. These effects were serious and potentially irreversible. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

According to the classification criteria of U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause target organ toxicity through single exposures.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : None known or reported by the manufacturer.

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Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀ (4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Nickel	> 2.55 mg/L (dust) (no deaths)	> 9000 mg/kg	N/Av
silver	> 5.16 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
Octamethyltrisiloxane	> 22.6 mg/L (vapor) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)

Other important toxicological hazards

: Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Harmful to aquatic life with long lasting effects. The product contains the following substances which are hazardous for the environment: Nickel. No data is available on the product itself. Should not be released into the environment.
This product also contains: Silver. The acute toxicity of silver to aquatic species varies drastically by the chemical form and correlates with the availability of free ionic silver. Aquatic toxicity is highly variable not only by organism but with physical and chemical characteristics of the water itself.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Nickel	7440-02-0	15.3 mg/L (Rainbow trout)	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Nickel	7440-02-0	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

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<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Nickel	7440-02-0	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

Persistence and degradability

- : The product itself has not been tested.
Contains the following chemicals which are not readily biodegradable: silver; Nickel; Octamethyltrisiloxane.

Bioaccumulation potential

- : The product itself has not been tested. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Octamethyltrisiloxane (CAS 107-51-7)	6.6	3610; 5600 (Fish) (parent compound)

Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way. Empty containers retain residue and can be dangerous. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Methods of Disposal

- : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

- : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package. Avoid release to the environment.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

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

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Nickel	7440-02-0	Yes	100 lb/45.4 kg	None.	Yes	0.1%
silver	7440-22-4	Yes	1000 lb/454 kg	None.	Yes	1%
Octamethyltrisiloxane	107-51-7	Yes	None.	None.	No	N/Ap

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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Health hazards (Skin sensitization; Carcinogenicity; Specific target organ toxicity, repeated exposure). Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Nickel	7440-02-0	Yes	Cancer	Yes	Yes	Yes	Yes	Yes	Yes
silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Octamethyltrisiloxane	107-51-7	No	N/Ap	No	No	Yes	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:

Nickel (Part 1, Group A Substance)
silver (Part 1, Group A Substance)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Nickel	7440-02-0	231-111-4	Present	Present	Not listed	KE-25818	Present	HSR003031
silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
Octamethyltrisiloxane	107-51-7	203-497-4	Present	Present	(7)-476	98-3-930	Present	May be used as a single component chemical under an appropriate group standard.

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
ATE: Acute Toxicity Estimate
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations

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CSA: Canadian Standards Association
DOT: Department of Transportation
EC50: Effective Concentration 50%
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organisation
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Av: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2017.
- 2. International Agency for Research on Cancer Monographs, searched 2017.
- 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2017 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - March 2015 version.
- 6. California Proposition 65 List - January 27, 2017 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2017.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.



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<p><u>Prepared for:</u></p> <p>Parker Hannifin Corp. 77 Dragon Court Woburn, MA, USA 01888 Telephone: 781-935-4850 Direct all enquiries to: Parker Hannifin Corp.</p>	 The logo for Parker Chomerics, featuring the word "Parker" in a bold, sans-serif font with a stylized arrow pointing right, followed by the word "Chomerics" in a smaller, sans-serif font.
<p><u>Prepared by:</u></p> <p>ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 The logo for ICC Compliance Center, featuring the letters "icc" in a blue circle, followed by the words "ComplianceCenter" in a bold, sans-serif font.

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