

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : SULFLO CUTTING OIL - DARK

Product Use : Cutting oil for high speed threading machines.

Chemical Family : Mixture.

Manufacturer part no. : SUD3C

Supplier's name and address:

Radiator Specialty Co., of Canada

1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Manufacturer's name and address:

Refer to Supplier

Information Telephone # : (905) 625-9117 (Monday - Friday, 8 AM - 4 PM)

24 Hr. Emergency Tel # : 613-996-6666 (CANUTEC)

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material).
Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15.
WHMIS symbols required on a supplier label:



Emergency Overview

: Black liquid. Sulphur odour.
Warning! May be harmful if inhaled or swallowed. Prolonged or repeated skin contact may cause drying and irritation. May cause respiratory irritation. Contains material which may cause cancer, based on animal data.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract.

Skin : May cause mild skin irritation. Prolonged contact, such as when trapped against the skin under clothing or jewelry, may be more irritating.

Eyes : May cause mild eye irritation.

Ingestion : May cause irritation of mouth, throat, and stomach. May cause nausea, vomiting, and diarrhea.

Effects of long-term (chronic) exposure

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Carcinogenic status : Possible cancer hazard. See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	60.00 - 100.00
di-tert-nonyl Polysulfides	68425-16-1	1.00 - 5.00
Sulphurized fats	68991-70-8	5.00 - 10.00
Chlorinated paraffins	63449-39-8	0.10 - 1.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : If breathed in, move person into fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Obtain medical attention if symptoms develop and persist.
- Skin contact** : Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. If irritation persists, seek prompt medical attention.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Ingestion** : Do not induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES**Fire hazards/conditions of flammability**

- : Not flammable under normal conditions of use. However, may ignite if exposed to extreme heat and flame. Vapours are heavier than air and collect in confined and low-lying areas. Product may float, and be re-ignited at the water's surface. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- : Not expected to be sensitive to mechanical impact or static discharge.

Suitable extinguishing media : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- : Carbon oxides; Hydrogen chloride gas; Phosgene; chlorine; Nitrogen oxides (NOx); Sulphur oxides; Polycyclic aromatic hydrocarbons; hydrogen sulphide; Phosphorus compounds; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.
- Spill response/cleanup** : Ventilate area of release. Remove all sources of ignition. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.
- Prohibited materials** : Do not use combustible absorbents, such as sawdust.

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Use in a well-ventilated area. Wear suitable protective equipment during handling. Avoid breathing vapours, fumes, or mists. Avoid contact with skin, eyes and clothing. Keep away from heat and flame. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container tightly closed when not in use.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.
- Incompatible materials** : Acids; Strong oxidizing agents.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION**Exposure Limits**

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Distillates (petroleum), hydrotreated heavy naphthenic	5 mg/m ³ (As 'Oil mist, mineral')	N/Av	5 mg/m ³ (As 'Oil mist, mineral')	N/Av
di-tert-nonyl Polysulfides	N/Av	N/Av	N/Av	N/Av
Sulphurized fats	N/Av	N/Av	N/Av	N/Av
Chlorinated paraffins	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

- : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

- : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.

Skin protection

- : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Wear resistant clothing and boots.

Eye / face protection

- : Safety glasses with side-shields or chemical splash goggles.

Other protective equipment

- : An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

- : Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapours, fumes, or mists. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid.	Appearance	: black
Odour	: sulphurous	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: 260°C	Specific gravity	: 0.87
Melting/Freezing point	: N/Av	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: Insoluble.
Vapour density (Air = 1)	: > 1	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 0%
Flash point	: 160°C		
Flash point Method	: N/Av	Auto-ignition temperature	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Upper flammable limit (% by vol.)	: N/Av
Flame Projection Length	: N/Av	Flashback observed	: N/Av
Absolute pressure of container	: N/Av	Viscosity	: N/Av
General Information	: No additional information.		

Section 10: STABILITY AND REACTIVITY

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Materials To Avoid And Incompatibility	: Strong oxidizing agents; Acids.
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

- Target organs** : Eyes, skin, respiratory system, central nervous system, liver and kidneys.
- Routes of exposure** : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES
- Irritancy** : Mild.
- Toxicological data** : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Distillates (petroleum), hydrotreated heavy naphthenic	> 5 mg/L (mist)	> 5000 mg/kg	> 2000 mg/kg
di-tert-nonyl Polysulfides	> 15.5 mg/L (mist)	17 781 - 21 495 mg/kg	N/Av
Sulphurized fats	N/Av	N/Av	N/Av
Chlorinated paraffins	N/Av	> 11 700 mg/kg	> 10 mL/kg

- Carcinogenic status** : This product contains Chlorinated paraffin. Chlorinated paraffin is classified as carcinogenic by IARC (Group 2B). No other components are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.
- Reproductive effects** : Not expected to cause reproductive effects.
- Teratogenicity** : Not expected to be a teratogen.
- Mutagenicity** : Not expected to be mutagenic in humans.
- Epidemiology** : None known or reported by the manufacturer.
- Sensitization to material** : Not expected to be a skin or respiratory sensitizer.
- Synergistic materials** : None known or reported by the manufacturer.
- other important hazards** : None known or reported by the manufacturer.
- Conditions aggravated by overexposure** : Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

- Ecotoxicity** : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

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>
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 5000 mg/L (Rainbow trout)	N/Av	None.
di-tert-nonyl Polysulfides	68425-16-1	> 100 mg/L (Zebra fish)	N/Av	None.
Sulphurized fats	68991-70-8	N/Av	N/Av	None.
Chlorinated paraffins	63449-39-8	> 300 mg/L (Bluegill sunfish)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 1000 mg/L (Daphnia magna)	N/Av	None.
di-tert-nonyl Polysulfides	68425-16-1	N/Av	N/Av	None.
Sulphurized fats	68991-70-8	N/Av	N/Av	None.
Chlorinated paraffins	63449-39-8	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 1000 mg/L/96hr (Green algae)	N/Av	None.
di-tert-nonyl Polysulfides	68425-16-1	N/Av	N/Av	None.
Sulphurized fats	68991-70-8	N/Av	N/Av	None.
Chlorinated paraffins	63449-39-8	N/Av	N/Av	None.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself. Contains: Distillates (petroleum), hydrotreated heavy naphthenic; di-tert-nonyl Polysulfides; Chlorinated paraffins. Distillates (petroleum), hydrotreated heavy naphthenic is not considered readily biodegradable and is insoluble in water. The substance may persist in the environment. di-tert-nonyl Polysulfides are not expected to biodegrade. Paraffin waxes and hydrocarbon waxes, chloro are not expected to be readily biodegradable.

Bioaccumulation potential : No data is available on the product itself. Contains: di-tert-nonyl Polysulfides; Paraffin waxes and hydrocarbon waxes, chloro. The log Kow value for di-tert-nonyl Polysulfides is 9.14 and its Bioconcentration Factor (BCF) is 75.66. Some paraffin waxes and hydrocarbon waxes, chloro have a bioconcentration factor (BCF) in fish of 7800 (HSDB).

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	None	Not regulated.	not regulated	none	
TDG Additional information	None.				

SECTION 15 - REGULATORY INFORMATION

Labelling:

Warning! May be harmful if inhaled or swallowed. May cause respiratory irritation. Prolonged or repeated skin contact may cause drying and irritation. Contains material which may cause cancer, based on animal data.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Avoid contact with incompatible materials. Keep away from extreme heat and flame. Wash thoroughly after handling. Keep containers closed when not in use. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing stopped, begin artificial respiration. Obtain medical attention if symptoms develop and persist. For skin contact, wash with soap and water while removing contaminated clothing. If irritation persists, seek prompt medical attention. For eye contact, flush with running water for at least 15 minutes. If irritation persists, seek prompt medical attention. If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Refer To Material Safety Data Sheet for further information.

Canadian Information:

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

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

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.


SECTION 16 - OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RTECS: Registry of Toxic Effects of Chemical Substances
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 2013.
2. International Agency for Research on Cancer Monographs, searched 2013.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2013 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2013.

<u>Prepared for:</u> Radiator Specialty Co. of Canada 1711 Aimco Blvd. Mississauga, ON, Canada, L4W 1H7 Telephone: 905-625-9117 (Mon. - Fri., 8 AM - 4 PM) Please direct all enquiries to Radiator Specialty.	
<u>Prepared by:</u> ICC The Compliance Center Inc. http://www.thecompliancecenter.com	

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12. ECOLOGICAL INFORMATION.**END OF DOCUMENT**