



XCELTHERM® SX500

Safety Data Sheet

Issue date: 8/1/2023

Revision date: 1/20/2025

Supersedes: 8/4/2023

Version: 1.2

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Identification

Trade name XCELTHERM® SX500
Chemical name Polydimethylsiloxane

1.2. Recommended use and restrictions on use

Use of the substance/mixture: A polydimethylsiloxane-based fluid for laboratory/testing bath applications that can be used in open bath operating temperatures from ambient to 170°C. In closed systems, it can be operated at temperatures from -40°C to 230°C.

Use of the substance/mixture: Heat Transfer Fluids

Recommended use: Heat transfer fluids

1.3. Supplier

Supplier

Radco Industries Inc.
CAGE Code 6ZS16
700 Kingsland Drive
Batavia, Illinois 60510
United States
T (630) 232-7966
www.radcoind.com

1.4. Emergency telephone number

Emergency number: For Chemical Emergency Call CHEMTREC 24hr/day 7days/week
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-741-5970
(collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients**3.1. Substances**

Substance type Polymer
Name Polydimethylsiloxane
CAS-No. 63148-62-9

Name	Product identifier	%	GHS US classification
Polydimethylsiloxane	CAS-No.: 63148-62-9	100	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures**4.1. Description of first aid measures**

First-aid measures general: If you feel unwell, seek medical advice.
First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion: Rinse mouth out with water. Call Poison Information Centre (www.big.be/antigif.html).
Consult a doctor/medical service if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Not irritant to skin. Practically non-symptoms: toxic in contact with skin (LD50 skin > 2000 mg/kg). Practically non-toxic by inhalation (LC50 inh, rat > 5 mg/l/4h). Slightly irritant to eyes.

Symptoms/effects after inhalation: No effects known.
Symptoms/effects after skin contact: No effects known.
Symptoms/effects after eye contact: No effects known.
Symptoms/effects after ingestion: No effects known.
Chronic symptoms: No known effects from this product.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures**5.1. Suitable (and unsuitable) extinguishing media**

Suitable extinguishing media: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (not alcohol-resistant).

XCELTHERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Unsuitable extinguishing media: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Specific hazards arising from the chemical

Fire hazard: DIRECT FIRE HAZARD: Not classified as flammable. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: DIRECT EXPLOSION HAZARD: No direct explosion hazard.

Hazardous decomposition products in case of fire: On burning: release of silicon oxides, carbon monoxide - carbon dioxide.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.

Protection during firefighting: Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment: Gloves (EN 374). protective clothing (EN 14605 / EN 13034).

Emergency procedures: Mark the danger area. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Heating: dilute combustible gas/vapour with water curtain.

Methods for cleaning up: Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

XCEL THERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Keep container tightly closed.

Hygiene measures: Observe normal hygiene standards.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

Heat-ignition: KEEP SUBSTANCE AWAY FROM: Heat sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents.

Storage area: Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. Clean, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

XCEL THERM® SX500 (63148-62-9)
No additional information available
Polydimethylsiloxane (63148-62-9)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Materials for protective clothing:
Good resistance: Polyvinylchloride (PVC)
Hand protection:
Gloves
Eye protection:
Safety glasses (EN 166)
Skin and body protection:
Protective clothing (EN 14605 or EN 13034)

XCELTHERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Respiratory protection:

Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Liquid.
Color:	Colourless
Odor:	Characteristic odour
Odor threshold:	No data available
pH:	No data available
Melting point:	Not applicable
Freezing point:	≤ -60 °C Pour point
Boiling point:	≥ 160 °C
Flash point:	≥ 302 °C Cleveland Open Cup Method
Relative evaporation rate (butyl acetate=1):	No data available
Flammability:	Non flammable.
Vapor pressure:	0.0007 mm Hg
Vapor pressure at 50°C:	0.00074 mm Hg
Relative vapor density at 20°C:	> 1
Particle size:	Not applicable
Relative density:	0.96 at 25°C (77°F)
Density:	960 kg/m ³ at 25°C (77°F)
Molecular mass:	3600 – 3800 g/mol
Solubility:	Insoluble in water. Water: < 0.1 g/100ml
Partition coefficient n-octanol/water (Log Pow):	2.86 – 4.25 (OECD 107 method)
Auto-ignition temperature:	482 °C
Decomposition temperature:	260 °C

XCEL THERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Viscosity, kinematic:	37 mm ² /s at 40°C (104°F)
Viscosity, dynamic:	35 at 40°C (104°F)
Explosion limits:	No data available
Explosive properties:	No data available.
Oxidizing properties:	Not oxidising.

9.2. Other information

VOC content:	≤ 0.5 %
Refractive index:	1.402
Heat of combustion:	26 kJ/g
Other properties:	Gas/vapour heavier than air at 20°C. Slightly volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with (strong) oxidizers.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

On heating: release of toxic/corrosive/combustible gases/vapours (formaldehyde).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified
Skin corrosion/irritation:	Not classified
Carcinogenicity:	Not classified
Aspiration hazard:	Not classified
Viscosity, kinematic:	37 mm ² /s at 40°C (104°F)

XCEL THERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Potential Adverse human health effects and symptoms:	Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Not irritant to skin. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Practically non-toxic by inhalation (LC50 inh, rat > 5 mg/l/4h). Slightly irritant to eyes.
Symptoms/effects after inhalation:	No effects known.
Symptoms/effects after skin contact:	No effects known.
Symptoms/effects after eye contact:	No effects known.
Symptoms/effects after ingestion:	No effects known.
Chronic symptoms:	No known effects from this product.
STOT-single exposure:	Not classified
STOT-repeated exposure:	Not classified
Reproductive toxicity:	Not classified

XCEL THERM® SX500 (63148-62-9)

LD50 oral rat:	> 5000 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit:	> 2000 mg/kg body weight (Rabbit, Similar product, Dermal)
LC50 Inhalation - Rat:	> 11.582 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (aerosol), 14 day(s))

Polydimethylsiloxane (63148-62-9)

LD50 oral rat:	> 5000 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit:	> 2000 mg/kg body weight (Rabbit, Similar product, Dermal)
LC50 Inhalation - Rat:	> 11.582 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (aerosol), 14 day(s))

Polydimethylsiloxane (63148-62-9)

Serious eye damage/irritation:	Not classified
--------------------------------	----------------

Polydimethylsiloxane (63148-62-9)

Respiratory or skin sensitization:	Not classified
------------------------------------	----------------

Polydimethylsiloxane (63148-62-9)

Germ cell mutagenicity:	Not classified
-------------------------	----------------

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general:	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air:	Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water:	Not harmful to fishes. Forming sediments in water. Not harmful to algae. Not harmful to bacteria.

XCEL THERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

XCEL THERM® SX500 (63148-62-9)	
LC50 - Fish [1]:	> 1000 mg/l (Pisces, Literature study, Nominal concentration)
EC50 - Other aquatic organisms [1]:	> 1020 mg/l (96 h, Mytilus edulis, Literature study)
ErC50 algae:	> 100 mg/l (72 h, Skeletonema costatum, Literature study, Nominal concentration)

Polydimethylsiloxane (63148-62-9)	
LC50 - Fish [1]:	> 1000 mg/l (Pisces, Literature study, Nominal concentration)
EC50 - Other aquatic organisms [1]:	> 1020 mg/l (96 h, Mytilus edulis, Literature study)
ErC50 algae:	> 100 mg/l (72 h, Skeletonema costatum, Literature study, Nominal concentration)

12.2. Persistence and degradability

XCEL THERM® SX500 (63148-62-9)	
Persistence and degradability:	Biodegradable in water.

Polydimethylsiloxane (63148-62-9)	
Persistence and degradability:	Biodegradable in water.

12.3. Bioaccumulative potential

XCEL THERM® SX500 (63148-62-9)	
Partition coefficient n-octanol/water (Log Pow):	2.86 – 4.25 (OECD 107 method)
Bioaccumulative potential:	Not bioaccumulative.

Polydimethylsiloxane (63148-62-9)	
Partition coefficient n-octanol/water (Log Pow):	2.86 – 4.25 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential:	Not bioaccumulative.

12.4. Mobility in soil

XCEL THERM® SX500 (63148-62-9)	
Ecology - soil:	Adsorbs into the soil.

Polydimethylsiloxane (63148-62-9)	
Ecology - soil:	Adsorbs into the soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

Product/Packaging disposal recommendations: Use appropriate containment to avoid environmental contamination. Remove waste in accordance with local and/or national regulations. Remove to an authorized waste treatment plant. May be discharged to wastewater treatment installation.

Additional information: Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA / ICAO / ADN / RID / ADG

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
Transport document description			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

14.6. Special precautions for user

DOT
No data available

TDG
No data available

IMDG
No data available

IATA
No data available

XCELTHERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

XCELTHERM® SX500 (63148-62-9)

Listed on the Canadian DSL (Domestic Substances List)

Polydimethylsiloxane (63148-62-9)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

XCELTHERM® SX500 (63148-62-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Polydimethylsiloxane (63148-62-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Revision date: 01/20/2025

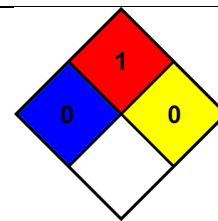
NFPA health hazard 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard 1 - Materials that must be preheated before ignition can occur.

XCEL THERM® SX500

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

NFPA reactivity 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health 0 Minimal Hazard - No significant risk to health

Flammability 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any particular process or for any particular purpose. Such information stated is to the best of Radco's knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made to its accuracy, reliability, or completeness, purchasers, users and distributors are not relying on any promise, representation, or recommendation made by Radco, and Radco does not accept liability for any loss or damage that may occur from the use of this information. Final determination of suitability of any material is the sole responsibility of the user. All material should be used with caution to guard against unknown hazards. Although certain hazards are described herein, Radco does not guarantee that these are the only hazards that exist.