

SAFETY DATA SHEET

1. Identification

Identification

Product name: PARATHERM™ SC

Additional identification

Chemical name: Polyalkylene polyamine

Recommended use and restriction on use

Recommended use: Heat Transfer Fluid
Restrictions on use: None identified.

Details of the supplier of the safety data sheet

Supplier

Company Name: PARATHERM
A DIV. OF THE LUBRIZOL CORPORATION
Address: 2009 Renaissance Boulevard
King of Prussia, PA 19406
US
Telephone: 610-941-4900

Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1)703 527 3887, OR WITHIN USA 800 424 9300

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Skin Corrosion/Irritation Category 2

Serious Eye Damage/Eye Irritation Category 1

Skin sensitizer Category 1

Aspiration Hazard Category 1

Label Elements:

Hazard Symbol:



Signal Word:

Danger

Hazard Statement: Flammable liquid and vapor.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May be fatal if swallowed and enters airways.

Precautionary Statements:

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation or rash occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see on this label). Wash contaminated clothing before reuse. In case of fire: Use CO₂, dry chemical or foam to extinguish. Water can be used to cool and protect exposed material.

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

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None identified.

3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Mineral oil	8042-47-5	60 - 70%
Pinene	Confidential	20 - 30%
Turpentine	8006-64-2	10 - 20%
Turpentine	9005-90-7	10 - 20%
Polymeric amide	Not determined.	1 - 5%
++ Beta-pinene	127-91-3	1 - 5%

++ The listed components are subcomponents of the hazardous ingredients listed above.

Trade secret information: A specific chemical identity and/or percentage of composition has been

withheld as a trade secret.

4. First-aid measures

- Ingestion:** Do NOT induce vomiting. Aspiration of material due to vomiting can cause chemical pneumonitis which can be fatal. If vomiting occurs naturally, the casualty should lean forward to reduce the risk of aspiration. Rinse mouth. Immediately call a POISON CENTER/doctor.
- Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
- Skin Contact:** Take off immediately all contaminated clothing. Take off contaminated clothing and wash before re-use. Wash skin thoroughly with soap and water. If skin irritation or rash occurs: Get medical attention. Launder contaminated clothing before reuse.
- Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Most important symptoms/effects, acute and delayed

Symptoms: See section 11.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: CO₂, Dry chemical or Foam. Water can be used to cool and protect exposed material.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations. Vapors may travel considerable distance to a source of ignition and flash back. Water may cause splattering. Container may rupture on heating. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. See section 10 for additional information. Toxic fumes, gases or vapors may evolve on burning or exposure to heat.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special 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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep unauthorized personnel away. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions: Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures. Use grounding and bonding connection when transferring material. In case of spills, beware of slippery floors and surfaces. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Ground and bond container and receiving equipment. Use non-sparking tools. Do not get in eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid contact with skin. Observe good industrial hygiene practices. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse. Avoid environmental contamination.

Maximum Handling Temperature: Not determined.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Keep cool. Store in a well-ventilated place. Store away from incompatible materials. See section 10 for incompatible materials. Do not store near potential sources of ignition.

Maximum Storage Temperature: Not determined.

8. Exposure controls/personal protection

Control Parameters:

Occupational Exposure Limits

Chemical name	Type	Exposure Limit Values	Source
Mineral oil - Inhalable fraction.	TWA	5 mg/m ³	US. ACGIH Threshold Limit Values (02 2012)
Mineral oil - Mist.	REL	5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	STEL	10 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Turpentine	PEL	100 ppm 560 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Turpentine	TWA	100 ppm 560 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Turpentine	TWA	20 ppm	US. ACGIH Threshold Limit Values (02 2012)
Turpentine	TWA	20 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values (03 2013)
Turpentine	REL	100 ppm 560 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
++ Beta-pinene	TWA	20 ppm	US. ACGIH Threshold Limit Values (02 2012)
++ Beta-pinene	TWA	20 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values (02 2013)

Appropriate engineering controls:

Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information:

Use explosion-proof ventilation equipment. Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection:

Wear tight-fitting goggles or face shield.

Skin Protection

Hand Protection:

Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear. Consult clothing/glove manufacturer to determine appropriate type of glove for given situation.

- Other:** Wear apron or protective clothing in case of contact. Do not wear rings, watches or similar apparel that could entrap the material. Long sleeve shirt is recommended.
- Respiratory Protection:** Use respirator with a combination organic vapor and dust/mist cartridge. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
- Hygiene measures:** Observe good industrial hygiene practices. Do not get in eyes. Avoid contact with skin. Wash contaminated clothing before reuse. When using do not smoke. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Yellow
Odor:	Pine
Odor threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	> 309 °F (> 154 °C)
Flash Point:	109 °F (43 °C) (ASTM D93 (Pensky-Martens (A and B Closed Cup)))
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	> 1 hPa
Vapor density:	No data available.
Relative density:	0.83 - 0.88 60.1 °F (15.6 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Do not expose to excessive heat, ignition sources, or oxidizing materials. Heat, sparks, flames.
Incompatible Materials:	Oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Harmful if inhaled.
Ingestion:	May be harmful if swallowed.
Skin Contact:	Causes skin irritation.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity

Oral

Product: Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in severe injury to the lungs and death. Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness. LD 50 (Unknown): > 2,000.1 mg/kg (Supplier information)

Dermal

Product: LD 50 > 5,000.1 mg/kg Not classified

Inhalation

Product: High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor.
Dusts, mists and fumes: LC 50 Not classified
Dusts, mists and fumes
Vapour: LC 50 Not classified

Skin Corrosion/Irritation:

Product: Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.
Classification: Severely irritating to skin. Rabbit.
Remarks: Causes skin irritation.

Serious Eye Damage/Eye Irritation:

Product: Remarks: Causes serious eye damage.
Classification: Risk of serious damage to eyes. Rabbit.

Respiratory sensitization:

No data available

Skin sensitization:

Mineral oil Classification: Not a skin sensitizer. (Literature)
Turpentine Classification: May cause sensitization by skin contact. Category 1
Turpentine Classification: May cause sensitization by skin contact. Category 1

Specific Target Organ Toxicity - Single Exposure:

Mineral oil If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Pinene May cause irritation to the mucous membranes and upper respiratory tract.

Aspiration Hazard:

Product: May be fatal if swallowed and enters airways.

Other effects:

Turpentine Lung
++ Beta-pinene Lung

Chronic Effects

Carcinogenicity:

No data available

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity:

No data available

Reproductive toxicity:

No data available

Specific Target Organ Toxicity - Repeated Exposure:

No data available

12. Ecological information

Ecotoxicity

Fish

Mineral oil

LC 50 (Not reported, 96 h): > 10,000 mg/l

NOEC (Not reported, 96 h): > 10,000 mg/l

Aquatic Invertebrates

Mineral oil

EC 50 (Water flea (Daphnia magna), 2 d): > 100 mg/l

NOEC (Water flea (Daphnia magna), 2 d): >= 100 mg/l

EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l

NOEC (Water flea (Daphnia magna), 21 d): 10 mg/l

Toxicity to Aquatic Plants

Mineral oil

LC 50 (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l

NOEC (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

No data available

Persistence and Degradability

Biodegradation

Mineral oil

OECD TG 301 F, 31.13 %, 28 d, Not readily degradable.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

No data available

Partition Coefficient n-octanol / water (log Kow)

No data available

Mobility:

No data available

Other Adverse Effects:

No data available.

13. Disposal considerations

Disposal instructions: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty containers retain material residue. Do not cut, weld, braze, solder, drill, grind or expose containers to heat, flame, spark or other sources of ignition.

Contaminated Packaging: Container packaging may exhibit hazards.

14. Transport information

DOT

UN Number:	UN 1299
UN Proper Shipping Name:	Turpentine solution
Transport Hazard Class(es)	
Class:	3
Label(s):	3
Packing Group:	III
Marine Pollutant:	Yes
Special precautions for user:	None established

IMDG

UN Number:	UN 1299
UN Proper Shipping Name:	TURPENTINE SOLUTION
Transport Hazard Class(es)	
Class:	3
Label(s):	3
EmS No.:	F-E, S-E
Packing Group:	III
Marine Pollutant:	Yes
Limited quantity	5.00L
Excepted quantity	E1
Special precautions for user:	None established

IATA

UN Number:	UN 1299
Proper Shipping Name:	Turpentine solution
Transport Hazard Class(es):	
Class:	3
Label(s):	3
Marine Pollutant:	Yes
Packing Group:	III
Limited quantity	10.00L
Excepted quantity	E1
Environmental Hazards	P
Special precautions for user:	None established
Other information	

Passenger and cargo aircraft: Allowed.
Cargo aircraft only: Allowed.

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

None known.

The DOT shipping information in this section is based on a bulk container. Please review the accompanying shipping papers for the correct shipping descriptions based the size of the package. Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. During transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 311 Classifications

Flammable (gases, aerosols, liquids, or solids)
Skin Corrosion or Irritation
Serious eye damage or eye irritation
Respiratory or Skin Sensitization
Aspiration Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

Inventory Status

Australia (AICS)

This product contains a substance that is not listed on the Australia Inventory of Chemical Substances.

Canada (DSL/NDSL)

Requires notification in Canada. Research and development samples must comply with CEPA R&D requirements.

China (IECSC)

This product contains a substance that is not listed on the Chinese Inventory of Existing Chemical Substances (IECSC).

European Union (REACH)

To obtain information on the REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Japan (ENCS)

This product contains a substance that is not listed on the Japanese Existing and New Chemical Substances (ENCS) list.

Korea (ECL)

This product requires notification before sale in Korea.

New Zealand (NZIoC)

This product requires notification before sale in New Zealand.

Philippines (PICCS)

This product requires notification before sale in the Philippines.

Switzerland (SWISS)

May require notification before sale in Switzerland.

Taiwan (TCSCA)

This product requires notification before sale in Taiwan.

United States (TSCA)

All substances contained in this product are listed on the TSCA inventory or are exempt.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

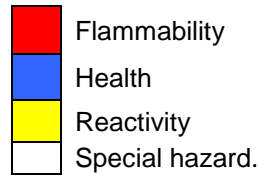
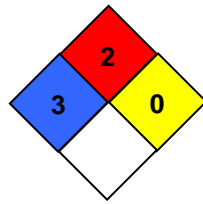
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	<input type="text" value="3"/>
Flammability	<input type="text" value="2"/>
Physical Hazards	<input type="text" value="0"/>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	01/31/2019
Version #:	3.1
Source of information:	Internal company data and other publically available resources.
Further Information:	Contact supplier (see Section 1)
Disclaimer:	As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.