

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Radco Industries, Inc., PO Box 305 LaFox, IL 60147 USA
Emergency Phone: (630) 232-7966 Website: www.Xceltherm.com

Product Name: **XCEL THERM[®] CA**, Heat Transfer Fluid
Effective Date: 10/01/05

2. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS# | CONCENTRATION |
|-------------------|-----------|---------------|
| White Mineral Oil | 8042-47-5 | 100.0 % |

Note(s): This is not a dangerous substance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

THIS PRODUCT IS A REFINED MINERAL OIL AND IT IS NOT EXPECTED TO PRESENT ANY UNUSUAL HAZARDS, IN PROPER USE.

4. FIRST AID MEASURES

Swallowing

Do not induce vomiting. Treat symptomatically. Not expected to be toxic by ingestion.

Skin

No emergency care anticipated. Wash skin with soap and water. Remove contaminated clothing. Wash clothing before re-use. Obtain medical attention if irritation persists.

Inhalation

Obtain medical attention. Oxygen may be given by qualified personnel if breathing is difficult or cyanosis (blue discoloration of skin) is noted. Give artificial respiration if not breathing. Remove to fresh air if aerosol spray is inhaled. Aspiration may cause pulmonary edema or aspiration pneumonia. Exposed persons should be kept under medical observation for at least 48 hours because delayed effects may occur.

Eye contact

No emergency care anticipated. Flush eyes thoroughly with water for several minutes. Obtain medical attention if discomfort persists.

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5. FIRE-FIGHTING MEASURES

| | |
|---------------------|---------------------|
| Flash point: | > 120 °C (> 248 °F) |
|---------------------|---------------------|

NFPA CLASSIFICATION

| | | | |
|-----------|-----------------|---------------|-----------------------|
| Health: 0 | Flammability: 1 | Reactivity: 0 | Special provisions: - |
|-----------|-----------------|---------------|-----------------------|

Special fire fighting procedures

Use water spray to cool fire-exposed containers and structures. If a rail or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from the area and let the fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.

Special protective equipment for firefighters

Body covering protective clothing, full "turn-out" gear. Self-contained breathing apparatus with full face-piece operated in positive pressure mode.

Extinguishing media

Suitable: Treat as an oil fire.
 Small fires:
 - CO2
 - dry powder
 - foam
 Large fires:
 - alcohol-type foam or universal-type foams
 - water fog

Unsuitable: Oil will float on water and can spread any fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear protective clothing when taking up spill. Eliminate sources of ignition.

Environmental precautions

This product is insoluble in water and will float on the surface. Prevent from entering sewers or drains. Should this product enter sewers or drains, it should be pumped out into an open vessel. Emergency services may need to be called to assist in this operation.

Methods for cleaning up

Floor may be slippery; use care to avoid falling.

Small spills Absorb on inert material such as sand, earth, vermiculite.

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7. HANDLING AND STORAGE

HANDLING

Handling precautions

Never use pressure to empty drums. Keep drums tightly closed to prevent contamination. Residual vapors may explode on ignition; do not puncture, drill, grind, or weld near this container. Electrically bond and ground all containers and equipment before transfer or use of material.

STORAGE

Storage requirements

Normal precautions common to safe manufacturing practice should be followed in handling and storage. Store in a dry location. Keep out of strong sunlight. Keep away from heat and flame. Keep container tightly closed.

Further information on storage

Keep away from strong oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTION

Respiratory protection

If vapor and/or mist is generated by heating, spraying, etc., wear an organic vapor respirator with a mist filter. No special respiratory protection is normally required.

Hand protection / protective gloves

Wear oil resistant gloves.

Eye protection

Face shield or chemical splash goggles in case of splashing.

Skin protection

Wear protective clothing, such as long sleeves to minimize skin contact.

Industrial hygiene measures

Remove contaminated clothing and clean it.
Do not eat or drink at work.

ENGINEERING CONTROLS

Ventilation

Local ventilation is needed in the presence of airborne mists.

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EXPOSURE LIMITS

| <u>Component</u> | <u>Type</u> | <u>Value</u> | <u>Remark</u> |
|------------------|--------------------|------------------------|---|
| Mineral Oil Mist | TWA (mist), ACGIH | 5.0 mg/m ³ | If used in way that generates a "mist" observe the limits for Mineral Oil Mist. |
| | STEL (mist), ACGIH | 10.0 mg/m ³ | |

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

| | |
|----------------|-------------|
| Physical state | Liquid |
| Color | Water-white |
| Odor | None |

OTHER PROPERTIES

| | |
|---------------------------------------|---|
| Boiling point | 300 °C at STP. |
| Specific gravity (H ₂ O=1) | < 1 |
| Vapor pressure | < 0.008 hPa (0.01 mmHg) at 20 °C |
| Solubility in water | Insoluble |
| Solubility in organic solvents | Soluble |
| Partitioning coefficient | log POW: > 6 This product is soluble in oil. |
| Flash point | 190 °C (375 °F) Method: Cleveland open cup ASTM D 92 |
| Percent volatiles | Nil |
| Kinematic viscosity | 16.1 cSt at 40°C |

10. STABILITY AND REACTIVITY

Stability: Stable.

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Incompatible materials

Normally unreactive; however avoid contact with:
Strong oxidizing agents.
Sunlight or ultraviolet light.
Heat or high temperature.

Hazardous combustion products

Burning can produce the following combustion products:
Oxides of carbon.
Soot

Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

SWALLOWING

Acute effects

Ingestion is unlikely to have any toxic effects but the product may act as an intestinal lubricant and result in diarrhea and frequent loose stools.
If vomiting occurs, aspiration may cause delayed pulmonary edema and chemical pneumonia.

Test results

Acute toxicity: LD50 - Rat
Result: > 5,000 mg/kg
Remark: Test results are based on analogy with a similar material.

SKIN ABSORPTION

Acute effects

Harmful effects are not expected from short periods of contact.

Effects of repeated overexposure

Prolonged or repeated contact may lead to skin irritation by dermatitis or oil acne.

INHALATION

Acute effects

Harmful effects are not expected from static vapor at ambient temperature.
Inhalation of mist or spray may be harmful.

Chronic effects

Aspiration may cause pulmonary edema or aspiration pneumonia.
Oil deposits in the lung may lead to fibrosis and reduced pulmonary function.
Prolonged or repeated inhalation of excessive amounts of oil mist or vapors may cause irritation of the respiratory tract.

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SKIN CONTACT

Acute effects

No evidence of harmful effects from available information.

Test results

Skin irritation: Species: Guinea pigs
Result: Non irritating.

EYE CONTACT

Acute effects

No evidence of harmful effects from available information.

Test results

Eye irritation: Species: Rabbit
Result: No irritation

SENSITIZATION

Test results: Species: Skin - Guinea pigs
Result: Non sensitizing.

CARCINOGENICITY

Assessment

No evidence of carcinogenic activity

12. ECOLOGICAL INFORMATION

This product is stable in water, and can be mechanically separated from water. The water may be suitable for disposal in a biological waste water treatment plant. Most hydrocarbon components of these substances will have little or no tendency to partition to air. The half lives for degradation of these hydrocarbons by reaction with hydroxyl radicals, in the troposphere, under the influence of sunlight, will all be less than one day, by extrapolation from the data quoted by Atkinson. Accordingly, any hydrocarbon material which does partition to air will be rapidly photodegraded. (Ref.: Atkinson, R., Gas-phase tropospheric chemistry of organic compounds: a review, Atmos. Environ., vol 24 A, pp. 1-41, 1990)

13. DISPOSAL CONSIDERATIONS

General: Incineration is probably the best means of disposal. Dispose of in accordance with appropriate Federal, State, and local regulations.

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14. TRANSPORT INFORMATION

DOT Classification

This product is not regulated by DOT.

| | |
|----------------------------------|--------------------------|
| Freight description road: | PETROLEUM OIL, N.O.I.B.N |
|----------------------------------|--------------------------|

IMDG Classification

This product is not regulated by IMDG.

ICAO Classification

This product is not regulated by ICAO.

15. REGULATORY INFORMATION

New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

| Chemical name | CAS# | New Jersey TS Number |
|-------------------|-----------|----------------------|
| White Mineral Oil | 8042-47-5 | |

EPA Hazard Categories (SARA 311, 312): None

CHEMICAL INVENTORY

Canada: The ingredients of this product are on the DSL.

Europe: The ingredients of this product are on the EINECS inventory.

United States: The ingredients of this product are on the TSCA inventory.

Australia: The ingredients of this product are on the AICS inventory.

Japan: The ingredients of this product are on the ENCS inventory.

FDA

Food additive

It meets the requirements of the US FDA as per 21 CFR 178.3620(b).

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16. OTHER INFORMATION

RECOMMENDED USES AND RESTRICTIONS

Please consult the product and/or application information bulletins for this product.

FURTHER INFORMATION

MAY BE ON THE INVENTORY LIST BUT NOT NECESSARILY REGISTERED, (Korea, China, New Zealand)
 CONSULT REGULATORY SPECIALIST.

HMIS RATING

| | | | |
|-----------|-----------------|---------------|--------|
| Health: 0 | Flammability: 1 | Reactivity: 0 | PPI: - |
|-----------|-----------------|---------------|--------|

LEGEND

| | |
|----------|---|
| STP | Standard temperature and pressure |
| W/W | Weight/Weight |
| 0 (HMIS) | Minimal hazard |
| 1 (HMIS) | Slight hazard |
| 2 (HMIS) | Moderate hazard |
| 3 (HMIS) | Serious hazard |
| 4 (HMIS) | Severe hazard |
| X (HMIS) | Personal protection rating to be supplied by user depending on use conditions |

WARNING: "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition; they may explode and cause injury or death. Do not attempt to clean since residue is difficult to remove and even a trace of remaining material constitutes as explosive hazard. "Empty" drums should be completely drained, properly bunged, and promptly returned to a drum recycler. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

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