XCELTHERM® 600 HEAT TRANSFER FLUID
SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name
XCELTHERM® 600 HEAT TRANSFER FLUID

Recommended Use
Thermal oil for use up to 600°F (315°C); food contact rated, NSF (HT1) FDA.

ISO 9001:2008 Certification Number: C2015-00068

Company Identification
Headquarters and Manufacturing Facility
Radco Industries, Inc.
700 Kingsland Drive
Batavia, IL 60510

Manufacturing Facility
Radco Industries, Inc.
39W930 Midan Drive
LaFox, IL 60147

Customer information number: 1-630-232-7966

EMERGENCY TELEPHONE NUMBER
Advisory Office in case of poisoning: Chemtrec
Chemtrec (North America): 1-800-424-9300
Chemtrec (International): 1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification of mixture:
Aspiration Hazard, Category 1

Hazard Pictograms:

Signal Word: Danger

Hazard Statements:
H304: May be fatal if swallowed and enters airways

Precautionary Statements:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P261: Avoid breathing fumes, vapours, and spray.

P262:	Do not get in eyes, on skin, or on clothing
P273:	Avoid release to the environment
P301 + P315 + P330 + P331:	IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Get immediate medical attention.
P304 + P315 + P341	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical attention.
P305 + P315 + P338 + P351:	IF IN EYES: P338: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get immediate medical attention.
P350:	Gently wash with soap and water.
P362:	Take off contaminated clothing and wash before reuse.
P405:	Store locked up.
P501:	Dispose of contents and container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	%Content	CAS Number
Severely hydroprocessed, paraffinic white mineral oil	100%	Proprietary

4. FIRST-AID MEASURES

Inhalation
Move to fresh air. If unconscious place in recovery position and seek medical advice. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. Remove from further exposure. Immediately call a doctor.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
For small fires use carbon dioxide, dry chemical or foam.
For large fires use alcohol-type foam, universal type foam or water fog.

Fire-Fighting Equipment
Firefighter should wear normal protective equipment (full bunker gear) and positive-pressure contained breathing apparatus. Water can be used to cool fire-exposed containers, to protect personnel and to disperse vapors and spills. Water runoff can cause environmental damage. Dike and collect water used to fight fires.

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.

6. ACCIDENTAL RELEASE MEASURES

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

7. HANDLING AND STORAGE

Handling

Do not breathe vapors/dust. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Storage
Do not store in open or unlabeled containers. Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Oil mist or vapor
ASCGIH TLV: 5 mg/m^3
OSHA PEL: 5 mg/m^3

Respiratory Protection
Use with adequate ventilation. Avoid breathing vapor. If heated and ventilation is inadequate, use NIOSH certified respirator, which will protect against organic vapor.

Hand Protection
Wear clothing and gloves that cannot be penetrated by chemicals or oil.

Eye Protection
Safety glasses, chemical goggles, or face shields recommended to prevent contact.

Other Protection
Do not eat, drink, or smoke when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

"PHYSICAL AND CHEMICAL PROPERTIES" DATA REPRESENTS TYPICAL LABORATORY SAMPLES, AND ARE NOT GUARANTEED FOR ALL SAMPLES.

Appearance:	Water-white, clear liquid
Odor:	Faint, oily
Odor threshold:	Not determined
Auto-ignition temperature:	660°F (349°C)
Decomposition temperature (ASTM D6743):	0.2% at 600°F (316°C), under nitrogen blanket
Evaporation Rate (EPA method 24 Percent Volatiles):	4.9%
Flash point Cleveland Open Cup (ASTM D92):	380°F (193°C), minimum
Flash point Pensky-Martens (ASTM D93):	352°F (178°C), minimum
Flammability (solid, gas):	Non-flammable
Lower flammability limit:	Not available
Upper flammability limit:	Not available
Initial boiling point and boiling range:	574°F (301°C), minimum
Melting point/freezing point:	Not applicable
Partition coefficient (n-octanol/water), Log P_{ow}:	Not determined
pH:	Not applicable
Solubility:	Water insoluble
Specific Gravity at 77°F/25°C	0.800 – 0.875
Vapor density:	Not determined
Vapor pressure:	0.01 mmHg at 77°F (25°C), maximum

Viscosity (ASTM D445):	14.0 – 17.0 cSt at 40°C

10. STABILITY AND REACTIVITY INFORMATION

Materials to avoid
Exposure to materials which are highly oxidizing should be avoided.

Hazardous polymerization
Does not occur.

Hazardous decomposition products
Incomplete combustion may give various cracked and oxidized hydrocarbons.

Stability
Stable

11. TOXICOLOGICAL INFORMATION

Acute toxicity and immediate effects

Eye:
A similar material produced a primary eye irritation score of 1.0/110; 24 hour (rabbit).

Ingestion, LD50 rat oral:
A similar material had a LD50 greater than 5g/kg.

Inhalation:
Aspiration may cause pulmonary edema or aspiration pneumonia. Oil deposits in the lung may lead to fibrosis and reduced pulmonary function.

Skin absorption, LD50 dermal:
A similar material produced a primary dermal irritation score of 2.7/8.0.
A similar material had a LD50 greater than 2g/kg and was not a skin sensitizer.

Carcinogenicity:
No component of this product is identified as a carcinogen by NTP, IARC or OSHA.

12. ECOLOGICAL INFORMATION

Photodegredation
According to the European Commission, European Chemicals Bureau the product component(s) “has little or no tendency to partition to air.” This product has a half-life less than one day in the troposphere when it reacts with hydroxyl radicals [•HO] under sunlight. Furthermore, any component of this product rapidly photodegrades if it partitions to air. (Reference: *Substance ID: 8042-47-5.* Rep. N.p.: European Commission, 2000. IUCLID.)

Biodegradation
The Organisation for Economic Co-Operation and Development’s (OECD) Modified Strum Test, or OECD 301B, measures the *ready biodegradability* of oils. The test measures the rate of degradation of an oil sample inoculated with bacteria over the course of 28 days.

XCELTHERM® 600 is *inherently biodegradable,* and has an average percentage of biodegradability between 20% and 60% (References:, Haus F., O. Boissel, and G.-A. Junter. *International Biodeterioration & Biodegradation* 54.2-3 (2004): 189-92.; *Substance ID: 8042-47-5.* Rep. N.p.: European Commission, 2000. IUCLID.).

Aquatic organism toxicity classification
Lepomis macrochirus (fish, fresh water): LC50 > 10,000 mg/L, 96 hours. This product does not undergo hydrolysis "under environmental conditions." (Reference: *Substance ID: 8042-47-5.* Rep. N.p.: European Commission, 2000. IUCLID.)

13. DISPOSAL INFORMATION

"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.

14. TRANSPORT INFORMATION

U.S. Dept. of Transportation Shipping Name
Not regulated.

Canadian Transportation of Dangerous Goods Shipping Name
Not regulated.

European Rail/Road (ADR/RID) Shipping Name
Not regulated.

Air (ICAO/IATA) Shipping Name
Not regulated.

Sea (IMO/IMDG)
Not regulated.

15. REGULATORY INFORMATION

California (Proposition 65)
This product does not contain any of the substances known to the State of California to cause cancer, birth defects, or reproductive harm.

CERCLA Reportable Quantity
This product is not reportable under 40 CFR Part 302.4.

Environmental Protection Agency
None of the ingredients are listed

National Toxicology Program (NTP)
None of the ingredients are listed.

OSHA Hazard Communication Standard
Not hazardous per 29 CFR 1910.1200(d).

SARA Title III Section 302 Extremely Hazardous Substances (40 CFR Part 355)

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA Title III Sections 311/312 Hazardous Categorization (40 CFR Part 370)
Hazardous categories for this product are: Acute= no; Chronic= no; Fire=no; Pressure=no; Reactive=no.

SARA Title III Section 313 (40 CFR Part 372)
This product is not regulated under Section 313 of SARA and 40 CFR Part 372.

U.S. Inventory (TSCA)
Listed on inventory.

Australia Inventory (AICS)
Listed on inventory.

Canada Inventory (DSL)
All of the ingredients are listed.

China (CICS)
None of the ingredients are listed.

EC Inventory (EINECS/ELINCS)
In Compliance

International Agency for Research on Cancer (IARC)
None of the ingredients are listed.

Japan Inventory (MITI)
Listed on inventory.

Korea Inventory (ECL)
Listed on inventory.

16. OTHER INFORMATION

Safety Data Sheet Creation Date:	17 March 1993
Safety Data Sheet Revision Date:	15 March 2017

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