Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

MultiTherm IG-4® Heat Transfer Fluid

1. Product and Company Identification

Product Identifier: **MultiTherm IG-4®**
Product Description: Heat Transfer Fluid
Manufacturer: MultiTherm LLC
11 General Warren Blvd., Malvern, PA 19355 USA
Emergency Contact: **Mark Smith**
Emergency Phone: **(484) 433-1787**
Customer Service: **(610) 408-8361**

2. Hazards Identification

OSHA/HCS status: This material is not hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the Substance or mixture: Not classified.

GHS CLASSIFICATIONS:
Signal word: No signal word.
Hazard Statement: No known significant effects or critical hazards.
Precautionary Statements
Prevention: Not applicable.
Response: Not applicable.
Storage: Not applicable.
Disposal: Not applicable.
Supplemental label elements: Avoid contact with skin and clothing. Wash thoroughly after handling.
Hazards not otherwise classified: Prolonged or repeated contact may dry skin and cause irritation.

3. Composition / Information on Ingredients

Substance/Mixtue: Substance.
Chemical name: White mineral oil (petroleum).

Ingredient Name	%	CAS Number
White mineral oil (petroleum)	100	8042-47-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8.

4. First Aid Measures

Description of necessary first aid measures
Eyes: Flush eye with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Skin: Immediately wash skin with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Most important Symptoms / Effects, acute and delayed

Potential acute health effects

Eyes: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin: May cause skin dryness and irritation.
Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eyes: No specific data.
Inhalation: No specific data.
Skin: Adverse symptoms may include irritation, dryness and cracking.
Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed. if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments: No specific treatment.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media: Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog).
Unsuitable extinguishing media: Do not use high pressure water jet.

Specific hazard arising from the chemical: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: Decomposition products may include the following material:
carbon dioxide
carbon monoxide

Special protective actions for Fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewer, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillages with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and Storage

General Procedures: Handle in accordance with good industrial hygiene and safety practices.

Precaution for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may 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. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

8. Exposure Controls / Personal Protection

Occupational exposure limits

Chemical Name	ACGIH TLV (United States, 4/2014)	OSHA PEL (United States, 2/2013)	NIOSH REL (United States, 10/2013)
White mineral Oil (petroleum)	TWA: 5 mg/m^3 8 Hours Form: Inhalable fraction	TWA: 5 mg/m^3 8 Hours.	TWA: 5 mg/m^3 10 Hours Form: Mist STEL:10 mg/m^3 15 min Form: Mist

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Appropriate Engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/Face Protection:	The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.
Skin/Hand Protection:	The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile.
Body protection:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory Protection:	Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. Physical and Chemical Properties

Physical state:	Liquid
Color:	Colorless
Odor:	Mild. Hydrocarbon.
Odor threshold:	Not available
pH:	Not available
Melting point:	Not available
Pour point:	-18°C (0°F)
Boiling point:	367°C to 800°C (962°F to 1472°F)
Flash point:	Cleveland Closed cup: 227°C (440°F)
Evaporation rate:	Not available
Flammability (solid, gas):	Not available
Lower/upper explosive limits:	Not available
Vapor pressure:	**<**0.011 kPa (0.08 mm Hg) [room temperature]
Vapor density:	Not available
Relative density:	0.866
Solubility:	Insoluble in the following materials: cold water and hot water.
Auto-ignition temperature:	355°C (671°F)
Decomposition temperature:	Not available
Viscosity:	Kinematic (40°C (104°F)): 0.412 cm2/s (41.2 cSt)
Partition coefficient n-octanol/water:	> 4

10. Stability and Reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: No specific data.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
White mineral oil (petroleum)	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rabbit Rat	>5 mg/l >2000 mg/kg >5000 mg/kg	4 hours - -

Irritation/Corrosion: Not available.

Sensitization: Not available.

Mutagenicity: Not available.

Carcinogenicity: Not available.

Conclusion/Summary: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346.

Reproductive toxicity: Not available.

Teratogenicity: Not available.

Specific target organ toxicity:

Single Exposure: Not available.

Repeated exposure: Not available.

Aspiration hazard: Not available.

Information on the likely Routes of exposure: Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: No known significant effects or critical hazards.

Skin contact: May cause skin dryness and irritation.

Ingestion: May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: Adverse symptoms may include irritation, dryness and cracking.

Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects Not available.

General: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and or dermatitis.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates: Not available.

12. Ecological Information

Toxicity:

Product/ingredient name	Result	Species	Exposure
White mineral oil (petroleum)	Acute LC50 >100 mg/l Acute LC50 >10000 mg/l	Daphnia Fish	48 hours 96 hours

Persistence and degradability:

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
White mineral oil (petroleum)	-	-	Inherent

Bioaccumulative potential:

Product/ingredient name	$LogP_{ow}$	BCF	Potential
White mineral oil (petroleum)	>4	-	high

Mobility in soil:
Soil/water partition Coefficient (k_{OC}): Not available.

Other adverse effects: No known significant effects or critical hazards.

13. Disposal Considerations

DISPOSAL METHOD: Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

EMPTY CONTAINER: Clean container thoroughly and dispose to licensed disposal contractor. Do not weld, cut, or braze empty containers, or allow product residue to come in contact with other sources of ignition as they may contain residue which could ignite.

RCRA classification: Not regulated.

This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

14. Transport Information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.

Special precaustions for user

Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 And the IBC Code: Not available.

15. Regulatory Information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed.
Clean Air Act Section 602 Class I Substances: Not listed.
Clean Air Act Section 602 Class II Substances: Not listed.
DEA List I Chemicals (Precursor Chemicals): Not listed.
DEA List II Chemicals (Essectial Chemicals): Not listed.

SARA 302/304

Composition/information on ingredients: No products were found.
SARA 304 RQ: Not applicable.

SARA 311/312

Classification: Immediate (acute) health hazard.

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
White mineral oil (petroleum)	100	No.	No.	No.	Yes.	No.

State regulations

Massachusetts: This material is not listed.
New York: This material is not listed.
New Jersey: This material is listed.
Pennsylvania: This material is not listed.

California Prop. 65: This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International lists

National Inventory

Austrialia: This material is listed or exempted.
Canada: This material is listed or exempted.
China: This material is listed or exempted.
Europe: This material is listed or exempted.

Japan:	This material is listed or exempted.
Malaysia:	Not determined.
New Zealand:	This material is listed or exempted.
Philippines:	This material is listed or exempted.
Republic of Korea:	This material is listed or exempted.
Taiwan:	This material is listed or exempted.

16. Other information

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision: 2017 April 14th

Revision: Final

Key to addreviations:

ATE = Acute Toxicity Estimate; ACGIH = American Conference of Governmental Industrial Hygienists; BCF = Bioconcentration Factor; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; IBC = Internediate Bulk Container; IMDG = Internatinal Maritime Dangerous Goods; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; LogPow = logarithm of the octanol/water partition coefficient; MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = Marine polution); NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; UN = United Nations; WHMIS = Worker Hazardous Materials Information System (Canada)

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