Safety Data Sheet

20548146

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Identification of the substance or mixture

Product code SCC1
Product name CryoCool™ 1 liter

Company/undertaking identification

Thermo Fisher Scientific (Asheville) LLC
275 Aiken Road
Asheville, NC 28804
1-866-984-3766

Thermo Fisher Scientific
(Milwaukee) LLC
2202 N Bartlett Avenue
Milwaukee, WI 53202-1009
USA
1.877.886.7629

24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident. Spill, Leak, Fire, Exposure, or Accident. Call CHEMTREC

Within the USA + Canada: 1-800-424-9300 and 1-703-527-3887
Outside the USA + Canada: 1-703-741-5970

Country Specific Emergency Number (if available):

Identified uses: Intended as a heat transfer fluid for closed-loop systems. For industrial use only. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

SECTION 2: Hazards identification

GHS Classification

Signal Word
WARNING

Hazard pictograms

Health hazards
Not classified

Physical hazards

GHS Physical Hazard	Flammable liquids
GHS Physical Hazard Category Number	Category 3

Environmental hazards
Not classified

Hazard Statements
H226 - Flammable liquid and vapor

Precautionary Statements

Prevention
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P233 - Keep container tightly closed
P243 - Take action to prevent static discharges
P240 - Ground/bond container and receiving equipment
P242 - Use non-sparking tools
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment

Response
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Storage
P403 + P235 - Store in a well-ventilated place. Keep cool

Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards
Not Applicable

HMIS

Health	0
Flammability	3
Reactivity	0

SECTION 3: Composition/information on ingredients

Chemical Name	CAS No.	Common name	EC No.	Weight-%
Decamethyltetrasiloxane	141-62-8	Not applicable	205-491-7	>= 28.0 - <= 42.0
Octamethyltrisiloxane	107-51-7	Not applicable	203-497-4	>= 26.0 - <= 38.0

We recommend handling all chemicals with caution.

SECTION 4: First aid measures

Description of first aid measures

Skin contact Remove/Take off immediately all contaminated clothing. Rinse skin with water.
Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Ingestion Clean mouth with water. Get medical attention if symptoms occur.
Inhalation Remove to fresh air. If symptoms persist, call a physician.
Notes to Physician Treat symptomatically.

Most important symptoms and effects, both acute and delayed
H226 - Flammable liquid and vapor

Indication of any immediate medical attention and special treatment needed
Get medical advice/attention if you feel unwell.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.
Unsuitable extinguishing media No information available.

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Liquid mist of this product can burn. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.
Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Vapor explosion hazard. Keep out of sewers. Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions
Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer.

Methods and material for containment and cleaning up
Vapor explosion hazard. Keep out of sewers. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Material will float on water. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Contain spilled material if possible. Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. See Section 13, Disposal Considerations, for additional information.

Reference to other sections
See section 8 for more information.

SECTION 7: Handling and storage

Precautions for safe handling
Keep away from heat, sparks and flame. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. This product is a poor conductor of electricity and can become electrostaically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.

Conditions for safe storage, including any incompatibilities
Minimize sources of ignition, such as static build-up, heat, spark or flame. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. No smoking, open flames or sources of ignition in handling and storage area. Store in tightly closed container. Use only with adequate ventilation. Do not store in: Opened or unlabeled containers. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. See Section 10 for more specific information.

Specific end use(s)
Intended as a heat transfer fluid for closed-loop systems. For industrial use only. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative. .

SECTION 8: Exposure controls/personal protection

Control parameters

Chemical Name	OSHA PEL	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Decamethyltetrasiloxane	None	None	None	None
Octamethyltrisiloxane	None	None	None	None

Chemical Name	Brazil - OEL - TWAs (LTs)	Brazil - OEL - Ceilings	Brazil - OEL - Skin Designations
Decamethyltetrasiloxane	None	None	None
Octamethyltrisiloxane	None	None	None

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Exposure controls

Personal Protective Equipment

Respiratory protection Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Hand protection Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection Tight sealing safety goggles.

Skin and Body Protection Wear suitable protective clothing.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls
Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Colorless, liquid	
Color	No data	
Odor	None	
Odor Threshold	No data	
Molecular Weight	No data	
Melting point / melting range	**°C** No data	**°F** No data
Boiling point / boiling range	**°C** >190	**°F** >374
Flammability (solid, gas)	No data	
Lower explosion limit	0.9 % vol	
Upper explosion limit	13.75 % vol	
Flash point	**°C** 45.5	**°F** 113.9
Autoignition Temperature	**°C** 350	**°F** 662
Decomposition temperature	**°C** No data	**°F** No data
pH	No data	
Evaporation rate	No data	
Viscosity	1.6 mm2/s	
Solubility	No data	
Partition coefficient: n-octanol/water	No data	
Vapor Pressure	4 hPa	
Specific gravity	No data	
Relative density	0.85	
Vapor density	No data	
Explosive properties	No data	
Oxidizing properties	No data	
Particle characteristics	No data	

Other information

Information with regard to physical hazard classes
No information available

Other safety characteristics
No information available

SECTION 10: Stability and reactivity

Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous reaction has not been reported.
Conditions to avoid	Product can oxidize at elevated temperatures. Flame, Heat.
Incompatible materials	Avoid contact with: Strong acids. Strong bases. Strong oxidizers.
Hazardous decomposition products	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Formaldehyde.

SECTION 11: Toxicological information

Information on toxicological effects

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Decamethyltetrasiloxane	No data available	> 2000 mg/kg(Rat)	=5080mg/m³(Rat)
Octamethyltrisiloxane	No data available	> 2000 mg/kg(Rat)	>22.6mg/L(Rat)

Principal Routes of Exposure

Acute toxicity Data are conclusive but insufficient for classification.

Skin corrosion/irritation Data are conclusive but insufficient for classification

Serious eye damage/irritation Data are conclusive but insufficient for classification

Respiratory or skin sensitization Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – single exposure Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – repeated exposure Data are conclusive but insufficient for classification

Carcinogenicity Data are conclusive but insufficient for classification

Germ cell mutagenicity Data are conclusive but insufficient for classification

Reproductive toxicity Data are conclusive but insufficient for classification

Aspiration hazard Data are conclusive but insufficient for classification

SECTION 12: Ecological information

Toxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
Decamethyltetrasiloxane	No data available	No data available	No data available	No data available	logPow8.21
Octamethyltrisiloxane	No data available	No data available	No data available	No data available	logPow6.598

Mobility in soil No information available.

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Results of PBT and vPvB assessment
No information available.

Other adverse effects No information available.

SECTION 13: Disposal considerations

Waste treatment methods
Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

SECTION 14: Transport information

IATA / ADR / DOT-US / IMDG
Classified as dangerous in the meaning of transport regulations

UN number or ID number	UN1993
UN proper shipping name	Flammable liquid, n.o.s.(Octamethyltrisiloxane, Decamethyltetrasiloxane)
Transport hazard class(es)	3
Packing group	III

Environmental hazards
Not Hazardous

Special precautions for user
Not Applicable

Maritime transport in bulk according to IMO instruments
Not Applicable.

SECTION 15: Regulatory information

Component	US TSCA
Decamethyltetrasiloxane 141-62-8 (>= 28.0 - <= 42.0)	Listed
Octamethyltrisiloxane 107-51-7 (>= 26.0 - <= 38.0)	Listed

US Federal Regulations

SARA 313
This product is not regulated by SARA.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain HAPs

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

WHMIS Hazard Class
B2 - Flammable liquid

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

National Regulations - Brazil

Chemical Name	CAS No.	Brazil - National Agency for Sanitary Surveillance (ANVISA)	Brazil - National List of Carcinogen Agents to Humans (LINACH)
Decamethyltetrasiloxane	141-62-8	Not Listed	Not Listed
Octamethyltrisiloxane	107-51-7	Not Listed	Not Listed

SECTION 16: Other information

Reason for revision SDS sections updated.
Revision number 2
Revision date 13-Jul-2023

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References
• ECHA: http://echa.europa.eu/
• TOXNET: http://toxnet.nlm.nih.gov/
• eChemPortal: http://www.echemportal.org/
• LOLI database: https://www.chemadvisor.com/loli-database

Abbreviations and acronyms
TWA - Time-Weighted Average
OELs - Occupational Exposure Limits
STEL - Short Term Exposure Limit
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CEPA - Canadian Environmental Protection Act
EPA - Environmental Protection Agency
OSHA - Occupational Safety and Health Administration of the US Department of Labor
IATA - International Air Transport Association
DOT - Department of Transportation
IMDG - International Maritime Dangerous Goods
ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH - National Institute for Occupational Safety and Health
AIHA - American Industrial Hygiene Association
HMIS - Department of Defense Hazardous Materials Information System
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED,INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"

End of Safety Data Sheet