



TC-3283

Safety Data Sheet

Date of issue: 10.12.24

Section 1: Identification

Product Identifier

Tradename	TC-3283
CAS Number	86508-42-1

Recommended use of the chemical and restrictions on use

Heat conduction of machinery and equipment, electronics cooling and cooling of datacenter equipment

Details of the supplier of the safety data sheet

Supplier	Tyrell Chemical
	1 Alhambra Plaza PH Floor
	Coral Gables FL 33134
Phone Number:	+1-786-633-0019

Emergency Telephone Number

Emergency Telephone Number	+1-786-633-0019
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Section 2: Hazard(s) Identification

Classification of the substance or mixture

Information concerning particular hazards for human and environment

The product has to be labelled due to the calculation procedure of OSHA Hazard Communication Standard (20 CFR 1910.1200).

Classification system

The classification is according to the latest edition of OSHA Hazard Communication Standard (29 CFR 1910.1200), and extended by company and literature data.

- Label Elements
- Labelling according to OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Hazard Pictograms

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



GHS07

Signal word *Warning* Hazard Statements (GHS-US)

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H413	May cause long lasting harmful effects to aquatic life

Precautionary statements (GHS-US)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / eye protection / face protection.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center or doctor if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in an approved waste disposal plant

Hazards not otherwise classified (HNOC) *No further relevant information available.*

Unknown acute toxicity (GHS US) *Not applicable*

Section 3: Composition/information on ingredients

Substance

Substance Type	Polymer
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CAS No.	Description	%	Classification (GHS-US)
86508-42-1	Perfluorinated compounds	>=99	Skin irrit. 2, H315 Eye irrit. 2A H319 STOT SE 3, H335 Aquatic Chronic 4, H413
<u>Mixture</u>			
Not applicable			

Section 4: First-aid measures

Description of first aid measures

General description

Immediately remove any clothing soiled by the product. In case of accident or if you feel unwell, seek medical advice immediately. Show this Safety Data Sheet to the medical personnel. Move the affected person from the contaminated area.

After Inhalation

No specific recommendations. If throat irritation or coughing persists, proceed as follows. Move affected person to fresh air and keep at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical advice/attention if discomfort continues. If not breathing give artificial respiration. In case of unconsciousness place patient on side for transportation. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Get medical advice/attention. There may be irritation and redness at the site of contact.

After eye contact

Immediately flush eyes thoroughly with water. Remove contact lenses, if present and easy to do so. Continue rinsing. Get medical advice/attention if discomfort continues. There may be irritation and redness. The eyes may water profusely.

After ingestion

No specific recommendation. If throat irritation or coughing persists, proceed as follows. Rinse mouth out with water. Get medical advice / attention if any discomfort continues. There may be soreness and redness of the mouth and throat.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2)

Indication of any immediate medical attention and special treatment needed

Treat symptomatically

Section 5: Fire-fighting measures

Extinguishing Media

Suitable extinguishing agents The product is nonflammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use firefighting measures that suit the environment.

Special hazards arising from the substance or mixture

Fire hazard	Thermal decomposition generates: Carbon oxides, hydrogen fluoride
Explosion hazard	Risk of explosion if heated under confinement due to excessive pressure buildup. Use water spray or fog for cooling exposed containers

Special protective equipment and precautions for firefighters

Firefighting instructions Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignored use water spray to disperse vapors and protect personnel stopping the leak.

Protective equipment Wear gas tight chemically protective clothing in combination with self-contained breathing apparatus (SCBA) and appropriate clothing including helmets, protective boots, and gloves will provide a basic level of protection of chemical incidents. For further information refer to section 8: exposure controls/personal protection.

Section 6: Accidental Release Measures

Personal Precautions, protective equipment and emergency procedures

General Measures	Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breathe gas, fumes, vapor, or spray. If outside do not approach from downwind. Mark the contaminated area with signs and prevent access to unauthorized personnel. Turn leaking containers leak-side up to prevent the escape of liquid.
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For non-emergency personnel

Emergency procedures	Prevent further leakage or spilling if safe to do so. Cut off the source of leakage as much as possible.
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For Emergency Responders

Protective Equipment	Do not attempt to act without suitable equipment. For further information refer to section 8 "Exposure controls/personal protection"
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Emergency Procedures

Environmental Precautions

Do not allow to enter sewers / surface or ground water. Notify authorities if product enters sewers or public waters.

Methods and material for containment and cleaning up

For containment	Stop leak if safe to do so. Dike up recovery or absorb with appropriate material.
Methods for cleaning up	Take up large spills with pump or vacuum and finish with dry chemical absorbent. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Sweep or shovel spills into appropriate container for disposal. Ventilate area. Label container for disposal by appropriate method.
Other information	Dispose contaminated material as waste according to section 13. Ensure adequate ventilation

Section 7: Handling and Storage

Precautions for safe handling

Wear protective clothing as described in section 8 of this safety data sheet. Keep away from food, drink, and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

For the general occupational hygienic measures refer to Section 8.

Information about protection against explosions and fires No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles No special requirements.

Information about storage in one common storage facility Not required.

Avoid contact with oxidants and other contraindication (see section 10)

Store at temperatures not to exceed 37°C

Further information about storage conditions Keep receptacle tightly sealed. Store in a cool dry place

Section 8: Exposure controls/personal protection

Exposure Controls

Components that limit values that require monitoring at the workplace Not required

Based on the composition shown in section 3, the following measures are suggested for occupational safety measure.

Appropriate engineering controls

Ensure good ventilation of the workstation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Keep away from foodstuffs, beverages, and feed stuffs.

Immediately remove all soiled and contaminated clothing.

Avoid contact with eyes and skin.

No specific ventilation requirements

See Section 7 for information about the design of technical facilities.

Personal protective equipment

Protection for hands

Protective gloves 29 CFR 1910.138 Hand Protection

Eye protection

Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and face protection

Hygiene Measures

Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking, or using the toilet. Do not eat, drink, or smoke when using this product.

Respiratory Protection

No specific recommendations. Provide adequate ventilation. Large spills: If ventilation is inadequate, suitable respiratory protection must be worn. In case of inadequate ventilation wear respiratory protection. In case of intensive or longer exposure use respiratory device that is independent of circulating air.

Skin and body protection

Wear suitable protective clothing

Other information

Safety Shoes 29 CFR 1910.136: Foot Protection

Section 9: Physical and Chemical Properties

General information

Appearance

Form	Liquid
Color	Colorless
Odor	Odorless
Odor Threshold	No data available
pH	No data available

Change in condition

Melting Point / Freezing Point	-93 °C (<-135.4 °F)
Initial boiling point and boiling range	130°C (266 °F)

Flash point:	No data available
Flammability (solid, gaseous)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Explosion limits	

Lower	No data available
Upper	No data available

Vapor pressure	No data available
Density	1.626 g/cm ³
Vapor Pressure	0.98 kPa
Heat of Vaporization	144 KJ/kg
Specific heat Capacity	1.19 Kg/Kg-K
Evaporation Rate	No data available

Solubility in / miscibility with water	No data available
Partition coefficient (n-octanol/water)	Not available
Dielectric Constant	9.50 @ 1Khz
Dielectric Strength	40.1 KV @2.54mm gap
Surface Tension	18.8 mN/m
Viscosity	

Dynamic
Kinematic
Other information

No data available
1.216 cSt
No further relevant information available.

Section 10: Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product
Stability	Stable at normal ambient temperature and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Extremely high temperatures, keep away from heat, sparks, flame, moisture
Materials to avoid	Powdered metal, finely divided metals (Al, Mg, Zn), strong bases. Strong oxidizing agents.
Hazardous decomposition	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Hydrogen fluoride (HF)., Fluorophosgene

Section 11: Toxicological Information

Acute toxicity

LD/LC50 values that are relevant for classification	Not classified
Acute Oral	LD50=5840 mg/kg
Acute Inhalation	LD50=22174 mg/m3
Acute Percutaneous	LD50>2000 mg/kg
Skin corrosion/irritation	Irritant to skin and mucous membranes.
Serious eye damage/irritation	Irritating effect.
Respiratory or skin sensitization	Sensitization or irritation possible. May cause discomfort
Target Organs	No specific target organs known
Aspiration Hazard	No classified

Additional toxicological information

Carcinogenic categories

IARC (International Agency for Research on Cancer)

Substance is not listed

NTP (National Toxicology Program)

Substance is not listed

OSHA-CA (occupational safety and Health administration)

Substance is not listed

General Information No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure

Section 12: Ecological Information

Toxicity

Aquatic toxicity	No further relevant information available.
Persistence and degradability	No further relevant information available.
Bio accumulative potential	No further relevant information available.
Mobility in soil	No further relevant information available.
Other adverse effects	No further relevant information available.

Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
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Section 13: Disposal Considerations

Waste treatment methods

General Information

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Remove to an authorized incinerator equipped with an afterburner and glue gas scrubber

Uncleaned packages

Recommendation

Disposal must be made according to official regulations. Dispose of surplus product and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration should only be considered when recycling is not feasible and must be equipped with a system for the neutralization or recovery of HF. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

Recommended cleansing agent

Water, if necessary with cleansing agents

Section 14: Transport Information

General The product is not covered by international regulations on the transport of dangerous goods (IDMG, IATA, DOT)

UN-Number

DOT, IDMG, IATA Not applicable

UN proper shipping name Not applicable
DOT, IDMG, IATA

Transport Hazard class(es) Not applicable
Class

Label -

Packaging Group**DOT, IDMG, IATA**

Not applicable

Environmental hazards**Marine Pollutant**

No

Special precautions for user

Not applicable

Transportation in bulk according to Annex II of MARPOL73/78 and the IBC code:

Not applicable

UN "Model Regulation"

Not applicable

Section 15: Regulatory information**US Federal Regulations****TSCA (Toxic Substances Control Act)**

Listed on the United States TSCA inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR 372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372

International Regulations**CANADA**

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National Regulations

Listed on AICS (Australian Inventory of Chemical Substances)

Listed on the IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Korean ECL (Existing Chemicals List)

Listed on the NZIoC (New Zealand Inventory of Chemicals)

Listed on the PICCS (Philippines Inventory of Chemicals and Chemical Substances)

US State Regulations**California Proposition 65 Carcinogens and Reproductive Toxins****Chemicals known to cause cancer**

Substance is not listed.

Chemicals known to cause reproductive toxicity for females

Substance is not listed

Chemicals known to cause reproductive toxicity for males

Substance is not listed

Chemicals known to cause developmental toxicity

Substance is not listed

Massachusetts Right-To-Know List

Substance is not listed

Minnesota Right-To-Know List

Substance is not listed

New Jersey Right-To-Know List:

Substance is not listed

New Jersey Special Hazardous Substance List

Substance is not listed

Pennsylvania Right-To-Know List

Substance is not listed

Pennsylvania Special Hazardous Substance List

Substance is not listed

Rhode Island Right to Know list

Substance is not listed

Cancerogenity Categories

EPA (Environmental Protection Agency)

Substance is not listed

TLV (Threshold Limit Value established by ACGIH)

Substance is not listed

NIOSH-ca (National Institute for Occupational Safety and Health)

Substance is not listed

Section 16: Other Information:

The contents and format of this SDS are in accordance with 29 CFR 1910.1200

Training Advice

Only trained personnel should use this material

Issued by

Tyrell Medical LLC

Date of Preparation / last revision

2024-10-12

Supersedes Date

2022-09-13

Revision

2

SDS status

Approved

NFPA Health Hazard

3 – Short exposure could cause temporary or residual injury even though prompt medical attention was given

NFPA Fire Hazard

1 – Materials that must be strongly heated before ignition will occur

NFPA Reactivity

0 – Normally stable even under fire exposure conditions and are not reactive with water



HMIS III Rating

Health

0 Minimal Hazard – No significant risk to health

Flammability

1 Minimal Hazard – Materials that must be preheated before ignition will occur

Physical

0 Minimal Hazard – Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives

Abbreviations and acronyms:

ACGIH:	American Conference of Governmental Industrial Hygienists
AICS:	Australian Inventory of Chemical Substances
CAS:	Chemical Abstracts Services (Division of the American Chemical Society)
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DOT:	US Department of Transportation
DSL	Domestic Substances List
ECL:	Existing Chemicals List
EPA:	Environmental Protection Agency
Eye Irrit. 2a:	Serious Eye damage/eye irritation – Category 2A
IECSC:	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
LC50:	Lethal Concentration, 50 percent
LD50:	Lethal Dose, 50 percent
NIOSH:	National Institute for Occupational Safety
NZIoC:	New Zealand Inventory of Chemicals
OSHA:	Occupational Safety and Health
PICCS:	Philippines Inventory of Chemicals and Chemical Substances
SARA:	Superfund Amendments and Reauthorization Act
Skin Irrit. 2:	Skin corrosion/irritation – Category 2
STOT SE 3:	Specific target organ toxicity (single exposure) – Category 3
TLV:	Threshold Limit Value

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and for other reasons we do not assume and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product then this SDS information may not be applicable. The above information is believed to be correct and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones that exist. Tyrell Medical LLC shall not be held liable for any damage resulting from handling or from contact with the above product

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