Safety Data Sheet

RTU Geothermal-PG (Propylene Glycol) Heat Transfer Fluid

SDS Revision Date: 12/12/2022

1. Identification

1.1. Product identifier

Product Identity	RTU Geothermal-PG (Propylene Glycol) Heat Transfer Fluid, (Ready to Use-RTU)
Alternate Names	01-311, Blended Formula, Pre-Mixed Geothermal Propylene Glycol Heat Transfer Fluid- 55 gallon

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	Ready to use heat transfer fluid (HTF) is specially formulated for geothermal systems. Non-toxic, non-flammable, and biodegradable.
Application Method	Read all precautions and instructions carefully before and after use.

1.3. Details of the supplier of the safety data sheet

Company Name	ComStar International Inc. 20-47 128th Street, College Point, NY 11356
Telephone No.	718-445-7900 800-328-0142 Fax: 718-353-5998

Emergency 24 HR response No: 1-800-424-9300 & 703-527-3887 CHEMTREC

Note: The CHEMTREC phone number is only for emergencies involving spills, leaks, fire, exposure or accident. Please direct all other inquiries to our customer service phone number.

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
PARTICLE SUSPENSION PACKAGE PROPRIETARY, No CAS #	<10	Not classified	

INHIBITED PROPYLENE GLYCOL CAS#:57-55-6	20	Not classified	
CORROSION INHIBITORS TSR#80100075-5002P	<15	Not classified	
COLOR DYE FOOD QUALITY DYES CAS#: N/A	<1	Not classified	
DE-IONIZED WATER CAS#: (N/A)	Balance	Not classified	

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.
[*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.

Eyes Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion Do not induce vomiting. Get medical attention immediately if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

Notes to Physician

Treat symptomatically

5. Fire-fighting measures

5.1. Suitable Extinguishing media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam

Unsuitable Extinguishing media

No information available

Flash Point

99 °C / 210

Method

No information

Autoignition Temperature

400 °C / 752 °

Explosion Limit

Upper 12.6 vol %

Lower 2.6 vol %

Sensitivity to Mechanical Impact

No information available

Sensitivity to Static Discharge

No information available

5.2. Special hazards arising from the substance or mixture

Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors

5.3. Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO2)

Protective Equipment and Precautions for Firefighter

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed

7. Handling and storage

7.1. Precautions for safe handling

Ensure adequate ventilation. Wear personal protective equipment/face protection

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Acids.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
N/A	PARTICLE SUSPENSION PACKAGE	OSHA	N/A
		ACGIH	N/A
		NIOSH	No Established Limit
		Supplier	No Established Limit
57-55-6	PROPYLENE GLYCOL	OSHA	150 ppm
		ACGIH	150 ppm
		NIOSH	No Established Limit
		Supplier	No Established Limit
N/A	CORROSION INHIBITORS	OSHA	150 ppm
		ACGIH	150 ppm
		NIOSH	No Established Limit
		Supplier	No Established Limit
N/A	FOOD QUALITY DYES	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
N/A	DE-IONIZED WATER (N/A)	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
N/A	PARTICLE SUSPENSION PACKAGE	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
57-55-6	PROPYLENE GLYCOL	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

N/A	CORROSION INHIBITORS	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
N/A	FOOD QUALITY DYES	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
N/A	DE-IONIZED WATER	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Respiratory	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirators, if exposure limits are exceeded or if irritation or other symptoms are experience
Eyes/face protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166
Skin/body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Green Liquid
Odor	Slight
Odor threshold	Not Measured
pH	6.5-7.5 100g/l aq. sol
Melting point / freezing point	-60 °C /-76 °F
Initial boiling point and boiling range	187 °C / 368.6 °F
Flash Point	99 °C / 210.2 °F
Evaporation rate (Ether = 1)	No information available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** 2.6 vol% **Upper Explosive Limit:** 12.6 vol%
Vapor pressure (Pa)	0.13 mbar @ 20 °C

Vapor Density	2.62 (Air = 1.0)
Specific Gravity	1.03-1.04
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	400 °C / 752 °F
Decomposition temperature	Not Measured
Viscosity (cSt)	45 mPa.s at 20 °C
Molecular Formula	C3 H8 O
Molecular Weight	76.10

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

None known, based on information available.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Incompatible products. Excess heat. Exposure to moist air or water.

10.5. Incompatible materials

Strong Oxidizing agents, Acids

10.6. Hazardous decomposition products

Hazardous polymerization does not occur.

10.7. Hazardous Reactions

None under normal processing.

11. Toxicological information

Ingredient	Oral LD50,	Skin LD50,	Inhalation LC50,
PROPYLENE GLYCOL (57-55-6)	20 g/kg Rat	20800 mg/kg Rat	No data available
PARTICLE SUSPENSION PACKAGE (N/A)	No data available	No data available	No data available

CORROSION INHIBITORS (N/A)	No data available	No data available	No data available
FOOD QUALITY DYES (N/A)	No data available	No data available	No data available
De-IONIZED WATER (N/A)	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Propylene glycol	57-55-6	Not listed	Not listed	Not listed	Not listed	Not listed

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
PROPYLENE GLYCOL (57-55-6)	EC50: = 19000 mg/L, 96h (Pseudokirchneriella subcapitata)	LC50: 41 - 47 mL/L, 96h static (Oncorhynchus mykiss) LC50: = 51400 mg/L, 96h static (Pimephales promelas) LC50: = 51600 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 710 mg/L, 96h (Pimephales promelas)	= 710 mg/L EC50 Photobacterium phosphoreum 30 min	EC50: > 1000 mg/L, 48h Static (Daphnia magna)
PARTICLE SUSPENSION PACKAGE (N/A)	Not Available	Not Available	Not Available	Not Available
CORROSION INHIBITORS (N/A)	Not Available	Not Available	Not Available	Not Available
FOOD QUALITY DYES (N/A)	Not Available	Not Available	Not Available	Not Available
De-IONIZED WATER (N/A)	Not Available	Not Available	Not Available	Not Available

12.2. Persistence and degradability

Miscible with water Persistence is unlikely based on information available.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

Will likely be mobile in the environment due to its water solubility.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

Component	log Pow
PROPYLENE GLYCOL	-0.9

13. Disposal considerations

13.1. Waste treatment methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Propylene glycol	57-55-6	X	Active	--

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Propylene glycol	57-55-6	X	--	200-338-0	X	X	X	X	X	X

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulation

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

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

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Propylene glycol	---	X	X	--	X

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Slight risk, Grade 1

Authorization/Restrictions according to EU REACH

Safety, health, and environmental regulations/legislation specific for the substance or mixture.

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Propylene glycol	57-55-6	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Propylene glycol	57-55-6	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

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