1. COMPANY AND PRODUCT IDENTIFICATION

Product Name	:	Crude Glycerine, Crude Glycerol, CG
Application Uses	:	Raw Material for refining glycerol
Company Name	:	Verasuwan Company Limited
Company Address	:	53/2, 53/8 Moo 5, Setthakij 1 Road, Nadee, Muang Samutsakorn 74000, Thailand
E-mail	:	verasuwan@gmail.com
Emergency Telephone	:	(+66)-34-468-801

2. HAZARDS INDENTIFICATION

GHS classification	:	This substance is not classified as dangerous according to regulation (EC) 1272/2008 [CLP]
GHS label elements Symbols		
Symbols/Pictograms	:	Not applicable
Signal words	:	None
GHS Hazard statements	:	Not applicable
GHS Precautionary statements	:	Not applicable

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Identity	:	Crude Glycerol with free fatty acid and water
CAS No.	:	56-81-5
EINECS No.	:	200-289-5

Classification of components according to GHS

Chemical Name	EC No.	CAS	Weight-%	GHS Classification
1,2,3-propanetriol, Glycerol	200-289-5	56-81-5	70 - 90%	H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation
Methanol	200-659-6	67-56-1	< 0.4	H225 - Highly flammable liquid and vapor. H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled H370 - Causes damage to organs.
Water	231-791-2	7732-18-5	3 – 12 %	Not Classified

4. FIRST AID MEASURES

General Information

Inhalation	:	Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Skin Contact	:	Wash with soap and water. Immediate medical attention is not required.
Eye Contact	:	Wash with plenty of water. If symptoms persist, call a doctor.
Ingestion	:	Clean mouth with water. If a large quantity has been ingested or you feel unwell, get medical advice/attention.

Self-protection of the first aider
Not applicable
Most important symptoms and effects, both acute and delayed
None known
Indication of any immediate medical attention and special treatment needed
Treat symptomatically

5. FIRE FIGHTING MEASURES

Specific Hazards	:	Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Hazardous Combustions products	:	Carbon monoxide (CO), Carbon dioxide (CO_2), Acrolein.
Extinguish media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray (fog). Dry chemical. Carbon dioxide (CO_2). Foam.
Unsuitable Extinguishing Media	:	High volume water in jet.
Advice for firefighters	:	Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Personal precautions, protective equipment and emergency procedures	:	Avoid breathing vapors or mists. Ensure adequate ventilation. Stop leak if you can do it without risk.
Environmental precautions	:	Avoid runoff to waterways and sewers. See Section 12 for additional ecological information.
Methods and material for containment and clean Up	:	**Methods for containment** Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal **Methods for cleaning up** Clean contaminated surface thoroughly. After cleaning, flush away traces with water.
Reference to other sections	:	See Section 7,8,13 for more information.

7. HANDLING AND STORAGE

General Precautions	:	Handle in accordance with good industrial hygiene and safety practice. Take off all contaminated clothing and wash it before re-use.
Precautions for Safe Handling	:	Avoid breathing vapors or mists. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities	:	Keep container tightly closed in a dry and well-ventilated place. Keep in a cool place.
Specific end use(s)	:	This information is supplied in the present Safety Data Sheet.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Exposure Limits

Keep personal exposure levels below Derived No Effect Level (DNEL) and national exposure limit values (if existing).

Chemical Name	European Union	United Kingdom
1,2,3-propanetriol, glycerol 56-81-5	Not available	TWA: 10 mg/ms STEL: 30 mg/ms

Derived No Effect Level (DNEL) - worker

1,2,3-propanetriol, glycerol (56-81-5)			
Type	Exposure route	DNEL	Remarks
Chronic effects, local	Inhalation	56	mg/m^3

Derived No Effect Level (DNEL) - Consumer

1,2,3-propanetriol, glycerol (56-81-5)			
Type	Exposure route	DNEL	Remarks
Chronic effects, systemic	Oral	229	Mg/kg bw/d
Chronic effects, local	Inhalation	56	mg/m^3

Predicted No Effect Concentration (PNEC)

1,2,3-propanetriol, glycerol (56-81-5)		
Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks
Freshwater	0.885	mg/l
Marine water	0.088	mg/l
Intermittent	8.85	mg/l
Impact on Sewage Treatment	1000	mg/l
Freshwater sediment	3.3	mg/kg dry weight
Marine sediment	0.33	mg/kg dry weight
Soil	0.141	mg/kg dry weight

Appropriate Engineering Controls	:	Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection	:	Recommendation(s): Wear safety glasses with side shields (or goggles).

Hand Protection	:	Wear protective gloves. Rubber gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	:	Suitable protective clothing.
Respiratory protection	:	None under normal use conditions. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. Recommended filter type: AP2.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	yellow, brown liquid
Odor	:	mild
Odor threshold	:	Data not available
pH	:	Not applicable
Boiling point	:	290 ^{o}C lit., glycerol
Melting / freezing point	:	18.17 ^{o}C lit., glycerol
Flash point	:	199 ^{o}C
Explosion / Flammability Limits in air	:	No information available
Auto-ignition temperature	:	No information available
Explosive limits		
Upper explosive limits	:	No information available
Lower explosive limits	:	No information available
Vapor pressure		
Vapor Density	:	No information available
Relative density	:	No information available
Water Solubility	:	Miscible in water
Solubility	:	No information available
Partition coefficient (log P_{ow})	:	-1.75 log K_{ow} OECD Test No. 107: Partition Coefficient (n-octanol/water): Shake Flask Method
Decomposition Temperature	:	No information available
Dynamic viscosity	:	1412 mPa.s Data not available OECD Test No. 114: Viscosity of Liquids @ 20°C, glycerol
Kinematic viscosity	:	Data not available
Explosive properties	:	Not explosive.
Oxidizing properties	:	Not oxidizing.
Density	:	1.261 kg/dm^3
Bulk density	:	No information available

10. STABILITY AND REACTIVITY

Chemical Stability	:	Stable under normal conditions of use.
Reactivity	:	There exists no specific test data for this product. For further information, see the subsequent subsections of this chapter.
Possibility of hazardous reactions	:	None under normal conditions.
Conditions to avoid	:	None under normal conditions.
Incompatible materials	:	Strong bases, Strong oxidizing agents.
Hazardous Decomposition products	:	Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide (CO). Carbon dioxide (CO_2). Acrolein.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological effects

Routes of exposure	:	Inhalation. Dermal.
Symptoms related to the physical, chemical and toxicological characteristic	:	None known.

Acute toxicity

1,2,3-propanetriol, glycerol (56-81-5)				
Method	Species	Exposure route	Effective dose	Remarks
Not defined	Mouse	Oral	>10000	LD50 (lethal dose) mg/kg
Not defined	Guinea pig	Dermal	>10000	LD50 (lethal dose) mg/kg
Not defined	Rat	Inhalation	>2.75	LC50 mg/l 4h

Skin corrosion/irritation

Non-irritation to the skin

1,2,3-propanetriol, glycerol (56-81-5)			
Method	Species	Exposure route	Results:
Not defined	Rabbit	Dermal	Non-irritant

Serious eye damage/irritation

Non-irritant.

1,2,3-propanetriol, glycerol (56-81-5)			
Method	Species	Exposure route	Results:
Not defined	Rabbit	Eye	Non-irritant

Respiratory or skin sensitisation

No sensitising effects known.

Germ cell mutagenicity

Not mutagenic.

1,2,3-propanetriol, glycerol (56-81-5)		
Method	Species	Results:
OECD Test No. 471: Bacterial Reverse Mutation Test	in vitro	Negative
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro	Negative
OECD Test No. 476: In vitro Mammalian Cell	in vitro	Negative

Gene Mutation Test		
OECD Test No. 482: Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells in vitro	in vitro	Negative

Carcinogenicity
Animal studies have not shown any carcinogenic potential.

1,2,3-propanetriol, glycerol (56-81-5)				
Method	Species	Exposure route	Effective dose	Remarks
Not defined	Rat	Oral		No carcinogenic effects have been observed. 2 years

Reproductive toxicity
This product does not contain any known or suspected reproductive hazards.

1,2,3-propanetriol, glycerol (56-81-5)				
Method	Species	Exposure route	Effective dose	Remarks
Not defined	Rat	Oral	2000	NOAEL mg/kg bw/d

STOT - single exposure No information available
STOT - repeated exposure

1,2,3-propanetriol, glycerol (56-81-5)				
Method	Species	Exposure route	Effective dose	Remarks
Not defined	Rat	Oral	8000 – 10000	NOAEL mg/kg bw/d
Not defined	Rat	Inhalation	167	NOAEL mg/m^3

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Low toxicity to aquatic organism.

1,2,3-propanetriol, glycerol (56-81-5)					
Method	Species	Exposure route	Effective dose	Exposure time	Remarks
Not defined	Salmo gairdneri	Freshwater	54000	96h	LC50 (lethal concentration) mg/l
Not defined	Daphnia magna	Freshwater	>10000	24h	EC50 (effective concentration) mg/l
Not defined	Algae Scenedesmus quadricauda	Freshwater	>10000	8d	EC3 mg/l
Not defined	Pseudomonas putida	Freshwater	>10000	16h	NOEC mg/l

Persistence and degradability

Readily biodegradable

1,2,3-propanetriol, glycerol (56-81-5)			
Method	Value	Exposure time	Results:
Not defined	94%	24h	Readily biodegradable

Bioaccumulative potential

Not potentially bioaccumulable.

Chemical Name	Potential coefficient	Bioconcentration factor (BCF)
1,2,3-propanetriol, glycerol	-1.75	

Mobility in soil : The substance is not expected to adsorb to a high degree to suspended solids and sediment based upon the log Pow.

Results of PBT and vPvB assessment : This substance does not meet the criteria for classification as PBT or vPvB.

Other Adverse Effects : No information available.

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products	:	The product is not classified as hazardous waste. Incinerate at a licensed installation.
Contaminated packaging	:	Thoroughly emptied and clean packaging may be recycled.
Waste codes / waste designations according to EWC / AVV	:	Recommended Use: Waste from residues/unused products: 16 03 06.
Other Information	:	Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

Land (as per ADR classification)

UN number	:	Not regulated
UN proper shipping name	:	Not regulated
Transport hazard class(es)	:	Not regulated
Packing Group	:	Not regulated
Environmental hazard	:	Not applicable
Special precautions for user	:	None

RID Rail transport

UN number	:	Not regulated
UN proper shipping name	:	Not regulated
Transport hazard class(es)	:	Not regulated
Packing Group	:	Not regulated
Environmental hazard	:	Not applicable
Special precautions for user	:	None

IMDG Sea transport

UN number	:	Not regulated
UN proper shipping name	:	Not regulated
Transport hazard class(es)	:	Not regulated
Packing Group	:	Not regulated
Environmental hazard	:	Not applicable
Special precautions for user	:	None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:	No information available

IATA Air transport

UN number	:	Not regulated
UN proper shipping name	:	Not regulated
Transport hazard class(es)	:	Not regulated
Packing Group	:	Not regulated
Environmental hazard	:	Not applicable
Special precautions for user	:	None

15. Regulatory Information

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

International Regulations	:	Not applicable.
European Union Germany	:	Water hazard class (WGK) slightly hazardous to water (WGK1)
Chemical safety assesment	:	A Chemical Safety Assessment is not required for this substance.

16. Other Information

Key or legend to abbreviations and acronyms used in the safety data sheet

Revision Date		1-June-2018
Revision Note	:	Not applicable.
This safety data sheet complies	:	Regulation (EC) No. 1907/2006, COMMISSION
with the requirements of	:	REGULATION (EU) No. 453/2010 of 20 May 2010.
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