

SAFETY DATA SHEET

Document Number : ARK1010E
Version : 2.0
Revision Date : 31/ 3/2026
Page 1 of 8

PEPeS

1. Identification of the mixture and of the company

Product name: PEPeS

Product code: R-P187

Company: ARK Resource co., Ltd.

Address: 383-2, Nakahara-machi, Nishi-ku, Kumamoto, 861-5271, Japan

Phone Number: +81-96-329-0880

Fax Number: +81-96-329-0882

Identified use: Research and development use only.

2. Hazard identification

GHS Classification of the mixture:

Acute toxicity – Inhalation (Dusts/Mists);	Ethylene Glycol; Category 4
Skin Corrosion/irritation;	Ethylene Glycol; Category 2
Serious eye damage/eye irritation;	Ethylene Glycol; Category 2B
Specific target organ toxicity (single exposure);	Ethylene Glycol; Category 1, Category 3
Category 1; Central nervous system, blood system, kidneys	
Category 3; Respiratory irritation, Narcotic effects	

Environmental hazards:

Aquatic acute toxicity;	Not classified
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GHS Label elements:

Pictograms



Signal word:

Danger

Hazard statements:

Causes skin irritation

Causes eye irritation

Harmful if inhaled

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to the following organs: central nervous system, blood system, kidneys

Precautionary statements (Prevention):

Wear protective gloves/protective clothing/eye protection/face protection

SAFETY DATA SHEET

Document Number : ARK1010E
Version : 2.0
Revision Date : 31/ 3/2026
Page 2 of 8

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area

Precautionary statements (Response):

If exposed; Call a poison center or doctor/physician
If in eyes; Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists; Get medical advice/attention
If on skin; Wash with plenty of soap and water.
If skin irritation occurs; Get medical advice/attention. Take off contaminated clothing and wash before reusing.
If inhaled; Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a poison center or doctor/physician if you feel unwell.

Precautionary statements (Storage):

Store in a well-ventilated place. Keep container tightly closed.

Precautionary statements (Disposal):

Dispose of contents/container to an approved waste disposal plant.

Others

Other hazards: Not available

3. Composition/information on ingredients

Substance/mixture: Mixture

Chemicals identify or ingredient name (Synonyms)	Formula	% W/V	CAS RN	ENCS No.	ISHL No.
Sucrose (Succharose)	C ₁₂ H ₂₂ O ₁₁	10.3	57-50-1	-	8-(4)-345
Ethylene Glycol	C ₂ H ₆ O ₂	29.7	107-21-1	(2)-230	*

* In the table means announced chemical substances

Note on ISHL No.:

Impurities that contribute to the classification of GHS: None

4. Description of First-aid measures

If Inhaled: Remove to fresh air and keep at rest. Call a doctor if necessary.
In case of skin contact: Rinse skin with plenty water/ shower. Call a doctor if necessary.
In case of eye contact: Rinse out with plenty of water. Remove contact lenses.
If swallowed: Rinse mouth with water. Call a doctor if necessary.
Precautions for first-aid persons: Wear rubber gloves and air-tight safety goggles.

5. Firefighting measures

SAFETY DATA SHEET

Document Number : ARK1010E

Version : 2.0

Revision Date : 31/ 3/2026

Page 3 of 8

Suitable extinguishing media:

Water, Extinguishing powder, Carbon dioxide (CO₂), Sand, Foam

Unsuitable extinguishing media:

No data available

Special hazards arising from the substance or mixture:

Ethylene Glycol; Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Specific fire-fighting measures:

No data available

Special protective equipment and precautions for fire-fighters:

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures:

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward and evacuate personnel from downwind areas.

Environmental precautions:

Do not let product enter drains.

Methods and materials for containment and cleaning up:

Collect, bind, and pump off spills

Measures to prevent secondary disasters:

Clean areas and objects thoroughly in accordance with environmental regulations.

7. Handling and storage

Handling:

Technical measures;

Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents.

Use with local exhaust ventilation.

Precautions;

Do not handle containers roughly, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Avoid generating vapors or mists unnecessarily. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops.

Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions;

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage:

SAFETY DATA SHEET

Document Number : ARK1010E
Version : 2.0
Revision Date : 31/ 3/2026
Page 4 of 8

Conditions for safe storage;

Check the storage conditions listed on the product label.

Recommended container and packaging materials;

Glass

Prohibited substances of contact/mixture;

Ethylene Glycol; Strong oxidizing agents

8. Exposure control/personal protection

Controlled concentration: No data available

Threshold Limit Value: Sucrose; TWA 10 mg/m³(ACGIH)

Ethylene Glycol; STEL 50 ppm vapor fraction

STEL 10 mg/m³ inhalable particulate matter, aerosol only

TWA 25 ppm vapor fraction (ACGIH)

Appropriate engineering controls: Keep source tightly closed or install local exhaust ventilation. Provide shower and eyewash station nearby and make clear the location of these.

Personal protective equipment:

Respiratory protection; Protective mask

Hand protection; Chemical protective gloves. (JIS T 8116)

Eye protection; Protective eyeglasses or chemical safety goggles

Skin and body protection; Long-sleeved work clothes

Hygiene measures; Handle in accordance with industrial hygiene and safety standards

9. Physical and chemical properties

Physical state:

Color; Colorless

Form; Liquid

Odor; Odorless

Melting point/ freezing point: No data available

Initial boiling point and boiling range: No data available

Flammability: No data available

lower flammability or explosive limits: No data available

Upper flammability or explosive limits: No data available

Flash point: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

pH: 7.5 to 8.0

Kinematic viscosity: No data available

Solubility in water: Soluble

n-Octanol /water partition coefficient: No data available

SAFETY DATA SHEET

Document Number : ARK1010E

Version : 2.0

Revision Date : 31/ 3/2026

Page 5 of 8

Vapor pressure:	No data available
Specific gravity /relative density:	No data available
Relative gas density (air=1):	No data available
Particle characteristics:	No data available

10. Stability and reactivity

Reactivity:

Chemical stability;

This product is considered a stable material under normal and anticipated storage and handling conditions.

Hazardous reactions;

This product is considered a stable material under normal and anticipated storage and handling conditions.

Conditions to avoid:

Sucrose; Sunlight, heat, contact with incompatible materials

Ethylene Glycol; Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark, Moisture

Incompatible materials:

Sucrose; Oxidizing agents

Ethylene Glycol; Strong oxidizing agents

Hazardous decomposition products:

Ethylene Glycol; Carbon monoxide (CO), Carbon dioxide (CO₂)

11. Toxicological information

Item	Chemical name	Information and Classification Basis	LD50
Acute toxicity -oral-	Sucrose	No data available	29700 mg/kg (Rat)
	Ethylene Glycol	Based on the NITE GHS classification results.	5890 - 13400 mg/kg (Rat)
Acute toxicity -dermal-	Sucrose	No data available	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.	9530 mg/kg (Rabbit)
Acute toxicity -inhalation gas-	Sucrose	No data available	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.	2.7 mg/L (Rat) 4 h
Acute toxicity -inhalation vapor-	Sucrose	No data available	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.	No data available
Acute toxicity -inhalation dust and mist-	Sucrose	No data available	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.	No data available
Skin corrosion/irritation	Sucrose	No data available	
	Ethylene Glycol	Based on the NITE GHS classification results.	
Serious eye damage/eye irritation	Sucrose	No data available	

SAFETY DATA SHEET

Document Number : ARK1010E

Version : 2.0

Revision Date : 31/ 3/2026

Page 6 of 8

	Ethylene Glycol	Based on the NITE GHS classification results.
Respiratory sensitization	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
Skin sensitization	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
Germ cell mutagenicity	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
Carcinogenic effects	Sucrose	ACGIH-A4; Not classified as a carcinogen for humans.
	Ethylene Glycol	Based on the NITE GHS classification results.
Reproductive toxicity	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
STOT-single exposure	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
STOT-repeated exposure)	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.
Aspiration hazard	Sucrose	No data available
	Ethylene Glycol	Based on the NITE GHS classification results.

12. Ecological information

Item	Chemical name	Information and Classification Basis
Ecotoxicity	Sucrose	No data available
	Ethylene Glycol	Algae/aquatic plants: ErC50 ; Pseudokirchneriella subcapitata > 1000 mg/L 72 h Fish: LC50 ; Oryzias latipes > 100 mg/L 96 h Crustacea: EC50 : Daphnia magna > 1120 mg/L 48 h
Persistence and degradability	Sucrose	No data available
	Ethylene Glycol	No data available
Bioaccumulative potential	Sucrose	No data available
	Ethylene Glycol	No data available
Mobility in soil	Sucrose	No data available
	Ethylene Glycol	No data available
Hazard to the ozone layer	Sucrose	No data available
	Ethylene Glycol	No data available

SAFETY DATA SHEET

Document Number : ARK1010E
Version : 2.0
Revision Date : 31/ 3/2026
Page 7 of 8

13. Disposal considerations

Waste from residues:

Dispose of in accordance with relevant legislation and local authority regulations.

Contaminated container and contaminated packaging:

Remove reagent completely from container before disposing.

14. Transport information

UN number: Not applicable

UN proper shipping name: Not applicable

UN classification: Not applicable

Subsidiary hazard class: Not applicable

Packing group: Not applicable

Marine pollutant: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

No information available

Marine regulation information: Not controlled under IMDG's regulations

Aviation regulation information: Not controlled under ICAO/IATA's regulations

Land regulation information: Not controlled under ADR/RID's regulations

15. Regulatory information

Japanese regulations:

Fire Service Act; Category IV, Class III petroleums, dangerous grade 3 water-soluble

Poisonous and Deleterious; Not applicable

Substances Control Law

Industrial Safety and Health Act; Harmful Substances Whose Names Are to be Indicated on the Label
(Law Art. 57)

Notifiable Substances (Law Art. 57-2)

Industrial Safety and Health Act

(2024~); 【2024.4.1~】 Chemical Substances Hazardous to Skin, etc
(Regulations Art. 594-2 Para. 1)

Act on the Evaluation of

Chemical Substances and

Regulation of Their

Manufacture, etc;

Priority Assessment Chemical Substances (Law Art. 2, Para.5)

Regulations for the carriage

and storage of dangerous

goods in ship;

Not applicable

Civil Aeronautics Law;

Not applicable

Marine Pollution Prevention

SAFETY DATA SHEET

Document Number : ARK1010E
Version : 2.0
Revision Date : 31/ 3/2026
Page 8 of 8

Law; Enforcement ordinance Appendix No. 1 Noxious liquid substance
Category Y

Pollutant Release and Transfer

Register Law; Not applicable
(2023.4.1-)

Export Trade Control Order; Not applicable

16. Other information

Key literature references and sources for data etc.:

EMERGENCY RESPONSE GUIDEBOOK (US DOT)

International Chemical Safety Cards (ICSC), MERCK INDEX

Chemical Dictionary, Kyoritsu Publishing Co., Ltd.

NITE: National Institute of Technology and Evaluation (JAPAN)

Japan Chemical Database Ltd.

GHS Classification Result (NITE)

etc.

Disclaimer:

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Further information:

The above information is believed to be correct but does not purport to be all inclusive and should be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. ARK Resource Co. shall not be held liable for any damage resulting from handling or from contact with the above product.