

## Safety Data Sheets

### 1. Product and Company Identification

Product Name	: Antifreeze
Product Code	: SPC-0394
General Use	: General cold and heat medium(Food factory), ice storage refrigerant
Product Description	: Antifreeze
MSDS Number	: 037-0042470
Manufacture	
Company Name	: Mimaki Engineering Co., Ltd
Address	: 2182-3 Otsu, Shigeno, Tomi-shi, Nagano 389-0512 Japan
Telephone No.	: +81-268-64-2413
Importer/Distributor Established in USA	
Company Name	: MIMAKI USA. INC.
Address	: 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A
Telephone No.	: 1-678-730-0170
Emergency Telephone No.	: +81-268-64-2281

### 2. Hazards Identification

#### [HCS Classification]

#### Physical Hazards

Flammable Liquids : Not classified

#### Health Hazards

Acute Toxicity – Oral : Not classified

Acute Toxicity – Dermal : Not classified

Skin Corrosion / Irritation : Not classified

Eye Damage / Irritation : Not classified

Sensitization – Respiratory : Not classified

Sensitization – Skin : Not classified

Germ Cell Mutagenicity : Not classified

Specific Target Organ Toxicity : Not classified

(Single Exposure)

Specific Target Organ Toxicity : Not classified

(Repeated Exposure)

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### Environmental Hazards

Hazardous to the Aquatic : Not classified

Environment - Acute Hazard

Hazardous to the Aquatic : Not classified

Environment - Long Term Hazard

The above list does not include category being non-classifiable or not-applicable.

### [HCS Label Elements]

Symbol

None

Signal Word

None

Hazard Statements

None

Precautionary Statements

None

## 3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.
1	Propylene glycol	55~60%	57-55-6
2	Additive	3~7%	Trade Secret
3	Water	35~40%	7732-18-5

## 4. First Aid Measures

Inhalation

: Immediately remove victim to fresh air.

Keep victim warm by covering with a blanket and rest.

If breathing is weak or stopped, loosen clothing and maintain an open airway and then, give artificial respiration.

If unconscious but breathing or if conscious but breathing is difficult, it is effective to give oxygen. It is recommended to conduct under doctor's guidance.

Never administer a dose without doctor's instructions.

Never give anything by mouth to victim.

Immediately get medical attention.

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Eye Contact	: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse eyes with clean water for at least 15 minutes and get medical attention from an ophthalmologist immediately. Hold eyelids open and away from eyeballs with fingers to ensure that all surfaces are flushed thoroughly.
Skin Contact	: Remove contaminated clothing, shoes, etc. promptly. Cut it off necessary. Flush affected area with water or lukewarm water and wash off with soap. If visual change occurs or pain persists, get medical attention. If contact with hot liquid, immediately wash with water and sufficiently cool with ice water. Immediately get medical attention.
Ingestion	If conscious, induce vomiting by giving more than two cups of milk or water and get medical attention immediately. Never give water, etc to an unconscious person. Keep victim warm and get medical attention immediately.
Expected acute and delayed symptoms, most important sign and symptoms	: If swallowed, it can cause diarrhea, vomit. If in eyes, it can cause inflammation. If on skin, it can cause inflammation. If inhaled mist, it can cause nausea.

### 5. Fire Fighting Measures

Extinguishing Media	: Use water (water fog), dry powder, and alcohol-resistant foam.
Unsuitable extinguishing media	: Don't use fire hose.
Special risk/hazard	: Containers may explode when heated.
Fire Fighting Instructions	: Eliminate all sources of ignition from fire area. For initial fire, use water (water fog), dry powder, etc. for fighting fire. For large fire, it is effective to use foam (alcohol-resistant foam), etc to shut off air supply. Pouring water can be dangerous by expanding fire. Cool surrounding facilities, etc. with water spray. Prohibit unnecessary personnel from entering fire area. Immediately remove moveable container to a safe area.

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Protection for fire-fighters : Wear safety glasses, protective clothing, and respiratory protection for the situation during fire fighting.  
Extinguish fire form upwind.

### 6. Accidental Release Measures

Personal precautions, protective equipment and emergency measures : Prohibit unnecessary personnel from entering spilled area separated by rope, etc.  
Wear suitable protective equipment during clean-up to prevent contact with water drop or inhalation of gas.  
Work from upwind and evacuate from downwind.

Precautions for the environment : Since it is related to soil and water contamination, recover spills as much as possible.

Recovery/neutralization : For large spills, dike with earth and sand, etc. to prevent spreading and sweep into an empty container and dispose of in a safe place. Be tender of discharging into sewers, drains, etc. Be sure to wear protective equipment during clean-up.  
For small spills, absorb with dry sand, earth, sawdust, wastes, etc and collect into an empty container that can be closed.

Method for containment and clean-up : Stop leakage, if it can be done without risk.  
In case of running off, prevent spread of the liquid and scoop or absorb with a proper absorbent.  
If inevitable, use a chemical.  
When using a chemical, it should meet the technical standards set by the Ordinance of the Ministry of Transport.

Preventive measure of secondary disaster : Immediately eliminate all source of ignition nearby.  
Request cooperation by giving notice to relevant agencies.

### 7. Handling And Storage

Handling : Keep good working environment.  
Technical measures: Prevent spills, overflow, scattering and generation of vapors.  
Prohibit the use of sources of fire, sparks and arcs around the handling place.  
Prohibit the use near sources of ignition of high temperature.  
Repair machinery containing residues after completely removing

them in a safe place.

Take precautionary measures against static discharge and wear conductive working clothes, shoes, etc.

Since vapors are heavier than air, it is likely to stay in low areas. So, pay attention to ventilation and sources of fire, etc.

Handle at room temperature and pay attention to mixing with water or impurities.

If it is possible to contact with skin or eyes, wear protective equipment.

If mist is generated, do not breathe mist by wearing respirators, etc.

Use a pump, etc. to take out the product from a container.

Use a thin tube and do not suck it with mouth.

Do not weld, heat, puncture or cut containers. It can cause ignition of residues following explosion.

Local exhaust or general ventilation : See 'Section 8.Exposure Controls and Personal Protective Equipment'.

Avoid to contact : See 'Section 10. Stability and Reactivity'.

Precaution for safe handling : Obtain special instruction before use.

Do not handle until all safety precautions have been read and understood.

Pay attention to sources of fire.

Wash hands and eyes thoroughly after handling.

If on clothing, change clothing.

Use only outdoors or in a well-ventilated area.

Do not eat or smoke when using this product.

Do not put pressure to an empty container. It can cause rupture of a container.

Do not drink.

Keep out of the reach of children.

Storage : Avoid heat, sparks, open flames and static built -up.

Technical measure : Be sure to keep container tightly closed.

Incompatible materials : See 'Section 10. Stability and Reactivity'.

Storage condition : Keep container in a well-ventilated area.

Protect from direct sunlight.

Keep away from oxidizing agents.

Safe container and : Use container without damage, corrosion, cracks, etc.

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packaging material

Do not handle a container in a violent manner such as turning over, impacting or dragging it.

Keep used container at a certain designated place.

### 8. Exposure Controls / Personal Protection

Controlled exposure level : No regulation.

Exposure Controls

Permissible exposure level(Threshold limits, biological exposure indices, etc)

: The Japanese Occupational Hygiene Society (2009): Not established.

ACGIH (2009): Not established.

Occupational Exposure Controls

Engineering Controls

: If mist and vapor is generated, use enclosure of sources or local exhaust ventilation.

Provide safety shower, basin and eye wash facilities near the place where the product is handled and indicate the location clearly.

Personal Protection

Respiratory Protection:

: Wear gas mask for toxic gas, if necessary.



Vapor  
Respirator

Hand Protection

: Wear impermeable rubber gloves.



Gloves

Eye Protection

: Wear ordinary glass with side shields or safety goggles.



Safety  
Glasses

Skin Protection:

: Wear long-sleeved working clothes.

Take off wet clothing and wash before reuse.



Protective  
Apron

General hygiene

: Check protective equipment on a regular based on a checklist.

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consideration

Do not eat or smoke during work.

Wash hands with soap before eating or smoking.

### 9. Physical And Chemical Properties

Appearance	- Physical state	: liquid
	- Color	: Red clear
Odor		: Almost odorless
pH		: 8~9
Melting Point / Freezing Point		: $\leq$ -40 degrees C
Boiling Point		: 107 degrees C/101kPa
Flash Point		: None.
Ignition temperature		: None.
Explosive limits: Lower		: None.
Explosive limits: Upper		: None.
Vapor pressure		: 1.7kPa/20 degrees C
Vapor density(Air=1)		: No data.
Specific gravity(Density)		: 1.05g/cm <sup>3</sup> (20 degrees C)
Solubility		: Soluble in water, low alcohols, acetone
Partition coefficient(n-octanol/water)		: No data.
Auto-ignition temperature		: No data.
Decomposition temperature		: No data.

### 10. Stability And Reactivity

Stability	: Stable
Possibility of hazardous reactions	: Explosion/ignition at room temperature hardly occurs, but if moisture is evaporated at high temperature, it is easy to ignite/burn. It can react with strong acids, strong oxidizing agents violently.
Conditions to avoid	: No data. (No hazardous reactions under normal handling condition.)
Incompatible materials	: Strong acids, strong oxidizing agents.
Hazardous decomposition products	: No data.

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## 11. Toxicological Information

Acute Toxicity	: (Annex) Acute toxicity(Oral, dermal, inhalation)					
	Content (%)	Oral	Dermal	Inhalation (Gas)	Inhalation (Vapor)	Inhalation (Dust, mist)
1.Propylene glycol	55~60%	Not classified	Not classified	Not applicable	Classification not possible	Classification not possible
2. Additive	3~7%	Classification not possible	Classification not possible	Not applicable	Classification not possible	Classification not possible
3. Water	35~40%	Not classified	Not classified	Not applicable	Not classified	Not classified
Total	100%					

### Oral

: It contains acute toxicant (oral) on Annex.

Acute toxicity (oral) estimation, ATE<sub>mix</sub>=33,333mg/kg is calculated by GHS criteria.

The product as a mixture is classified as 'Acute toxicity (Oral): Not classified'.

### Dermal

: It contains acute toxicant (dermal) on Annex.

Acute toxicity (dermal) estimation, ATE<sub>mix</sub>=37,500mg/kg is calculated by GHS criteria.

The product as a mixture is classified as 'Acute toxicity (Dermal): Not classified'.

### Inhalation

: It contains acute toxicant (inhalation) on Annex.

The product as a mixture is not possible to classify for acute toxicity(inhalation).

### Serious eye damage/eye irritation

: It contains eye irritants classified below.

-Not classified: Water, propylene glycol

The product as a mixture is classified as 'Serious eye damage/eye irritation: Not classified'.

Serious eye damage/eye irritation of 3~7% of this mixture is unknown.

### Skin corrosion/irritation

: It contains skin irritants classified below.



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	-Not classified: Water, Propylene glycol. The product as a mixture is classified as 'Skin corrosion/irritation: Not classified'. Skin corrosion/irritation of 3~7% of this mixture is unknown.
Respiratory or skin sensitization	: It contains respiratory sensitizers classified below. -Not classified: Water, propylene glycol The product as a mixture is classified as 'Respiratory sensitization: Not Classified'. Respiratory sensitization of 3~7% of this mixture is unknown. It contains skin sensitizers classified below. -Not classified: Water, propylene glycol The product as a mixture is classified as 'Skin sensitization: Not classified'. Skin sensitization of 3~7% of this mixture is unknown.
Germ cell mutagenicity	:It contains germ cell mutagens classified below. -Not classified: Water, propylene glycol The product as a mixture is classified as 'Germ cell mutagenicity: Not classified'. Germ cell mutagenicity of 3~7% of this mixture is unknown.
Carcinogenicity	: Classification is not possible due to lack of data.
Reproductive toxicity	: Classification is not possible due to lack of data.
Specific target organ toxicity (single exposure)	: It contains specific target organ toxicants(single exposure)classified below. -Not classified: Water, propylene glycol The product as a mixture is classified as 'Specific target organ toxicity (single exposure): Not classified'.
Specific target organ toxicity (repeated exposure)	: It contains specific target organ toxicants(repeated exposure)classified below. -Not classified: Water :The product as a mixture is classified as 'Specific target organ toxicity(repeated exposure): Not classified'.
Aspiration hazard	: Classification is not possible due to lack of data.

### 12. Ecological Information

Ecotoxicity	: It contains hazardous substances(acute)to aquatic environment
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classified below.

-Not classified: Water, propylene glycol

The estimation of hazards to aquatic environment (acute)

LC50=166.7mg/L is calculated by GHS criteria.

The product as a mixture is classified as 'Hazards to aquatic environment (Acute): Not classified'.

Hazards to aquatic environment (Acute) of 3~7% of this mixture is unknown.

It contains hazardous substances (chronic) to aquatic environment classified below.

-Not classified: Water, propylene glycol

The product as a mixture is classified as 'Hazards to aquatic environment (Chronic): Not classified'.

Hazards to aquatic environment (Chronic) of 3~7% of this mixture is unknown.

Persistence/degradability	: No data.
Bio-accumulation	: No data.
Mobility in soil	: No data.
Other adverse effects	: No data.
Environment criteria	: No data.

### 13. Disposal Considerations

Residual wastes : Dispose the waste according to national and local regulations.  
Do not dump.

Contaminated container and packages : Contaminated or empty container packaging are to be disposed according to national and local regulations.

Comply with all USA, national and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.

### 14. Transport Information

US DOT Information	: Not regulated as a hazardous material for transport.
TDG Information	: Not regulated as dangerous goods for transport.
IATA Information	: Not regulated as dangerous goods for transport.

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ICAO Information	: Not regulated as dangerous goods for transport.
IMDG Information	: Not regulated as dangerous goods for transport.
Special precautions	: Load the containers in a manner that they are certain not to result in direct sunlight exposure, damage, corrosion, leak, while being transport. Load the containers in manner that they are not to fall apart while being transport. Do not place heavy load on top of the container. Check a thing without a leak in a container. Perform prevention of collapse of cargo surely.

### 15. Regulatory Information

US federal regulations	: All components are active on the TSCA Inventory List.
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### 16. Other Information

References	1) The Japanese Occupational Hygiene Society recommendation on permissible exposure level, etc (OELs) 2) Thresholds limit values for chemical substances and physical agents and biological exposure indices. ACGIH 3) Material Safety Data Sheet (Propylene glycol), Japan Petrochemical Industry Association (1998)
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