

MATERIAL SAFETY DATA SHEET

Date of Preparation 1999/11/01
 MSDS No of Revision HCSDE (6)
 Date of Revision 2013/04/01

1. Identification of the substance/preparation and of the company

Trade name **HEMOCLEAN[®] , HEMOCLEAN[®] G (in China)**

Manufacturer's name **HUNIZ CO., LTD.**
 22, Noksansandan 165-ro, Gangseo-gu, Busan 618-817,
 Korea
 TEL: 82 51 831 1030 FAX: 82 51 831 1040
 E-mail address: jhpark@huniz.kr

Emergency call number 82 51 831 1030

2. Composition/Information on ingredients

Chemical nature Peracetic acid cleaner

| Name of ingredients | CAS No. | % |
|---------------------|-----------|-----------------|
| Peracetic acid | 79-21-0 | 1.73% |
| Hydrogen peroxide | 7722-84-1 | ≤5.95% |
| Acetic acid | 64-19-7 | 15~17% |
| Inert ingredients | | Business secret |
| Purified water | | Balance |

3. Hazards identification

Classification of substance

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Physiochemical hazard Corrosive/ Category1
 Skin corrosion Category 1
 Specific target organ toxicity Category 1 (Target organ: eye, lung, respiratory organ)
 Acute toxicity, Oral Category 4
 Chronic aquatic toxicity Category 3

Labeling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word

Danger

Hazard statement(s)

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage.

| | |
|----------------------------|---|
| | H318 Causes serious eye damage |
| | H370 Causes damage to organs |
| | H372 Causes damage to organs through prolonged or repeated exposure |
| | H302 Harmful if swallowed |
| | H412 Harmful to aquatic life with long lasting effects |
| Precautionary statement(s) | Precautionary statement(s) |
| | P234 Keep only in original container. |
| | P280 Wear protective gloves/protective clothing/eye protection/face protection.. |
| | P264 Wear protective gloves/protective clothing/eye protection/face protection. |
| | P260 Do not breathe dust/fume/gas/mist/vapors/spray. |
| | P270 Do not eat, drink or smoke when using this product. |
| | P273 Avoid release to the environment.. |
| | P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| | P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| | P363 Wash contaminated clothing before reuse. |
| | P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| | P310 Immediately call a POISON CENTER or doctor/physician. |
| | P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.. |
| | P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| | P390 Absorb spillage to prevent material damage. |
| Storage | P405 Store locked up. *plastic canister with ventilated cap |
| | P406 Store in corrosive resistant/...container with a resistant inner liner. |
| Disposal | P501 Dispose of contents/container to relevant law |

US NAFFA classification

Health: 3

Fire: 0

Reactivity: 0

Water-reactivity: 0

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UN number/ IMDG/ ITA

UN No. 3149

Class: 5.1

Pictogram

**4. First aid measures**

| | |
|-------------------------|--|
| If Inhaled | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician |
| In case of skin contact | Wash off with soap and plenty of water. Consult a physician |
| In case of eye contact | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| If swallowed | Do not induce vomiting. Never give anything by mouth to and unconscious person. Rinse mouth with water. Consult a physician. |

5. Firefighting measures

| | |
|---|---|
| Extinguishing property | Flash point: Not flashed below 93°C Fire point: Not burn below 203°C |
| Suitable extinguishing media | Use water spray |
| Special hazards arising from the substance or mixture | Alcohol-resistant foam, dry chemical or carbon dioxide |
| Advice for firefighters | Wear self contained breathing apparatus for firefighting if necessary. |
| Further information | a bit unstable. Steadily decomposed to oxygen gas |

6. Accidental release measure

| | |
|--|---|
| Individual precautions | Wear suitable protection. Avoid contact with skin and eyes |
| Precautions for the environmental protection | Product is biodegradable. Although don't wastes concentrate to the drainage, river or soil. |

Methods and materials for containment and cleaning up

Contain spillage, and then collect by send or soil

7. Handling & Storage

| | |
|-----------------------------|---|
| Conditions for safe | Containers which are opened must be carefully resealed and upright to prevent leakage. Wear the suitable protective gloves, clothing, and goggles and face mask. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. |
| Conditions for safe storage | Avoid directly sunlight. |

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Store in a cool and well-ventilated place. Keep original container with ventilated filter. Metal combustible materials should be stored away from this

8. Exposure controls/personal protection

Exposure Assessment

KOSHA

| Chemical Name | CAS No. | TWA | STEL |
|-------------------|-----------|-------------------------------|------------------------------|
| Hydrogen Peroxide | 7722-84-1 | 1 ppm , 1.5 mg/m ³ | - |
| Acetic acid | 64-19-7 | 10 ppm, 25 mg/m ³ | 15 ppm, 37 mg/m ³ |
| Phosphoric acid | 7664-38-2 | 1 mg/m ³ | 3 mg/m ³ |

ACGIH

| Chemical Name | CAS No. | TWA | STEL |
|-------------------|-----------|---------------------|---------------------|
| Hydrogen Peroxide | 7722-84-1 | 1 ppm | - |
| Acetic acid | 64-19-7 | 10 ppm | 15 ppm |
| Phosphoric acid | 7664-38-2 | 1 mg/m ³ | 3 mg/m ³ |

*TWA : Time Weighted Average

Biological exposure criteria No data available

Components with specific control parameters

Air-purifying respirator

Personal protective equipment

Respiratory protection

Use a full-face respirator

Hand protection

Protective gloves recommended

Eye/face protection

Recommended: Tight fitting safety goggles

Body protection

Recommended: Complete suit protective against chemicals protective clothing

9. Physical & Chemical properties

| | |
|-------------------------------|--|
| Physical state and appearance | Liquid (@ 20°C) |
| Flash point | Not available (Not flashed below 93°C) |
| Autoignition temperature | Not available (Not ignite below 500°C) |
| pH | 1.07 (@ 20°C) |
| Boiling Point | 105°C |
| Melting Point | -21°C ~-22°C |
| Specific Gravity | 1.097(@ 20°C) |
| Solubility | Easily soluble in cold water (@ 20°C) |
| Explosive property | Not a self reactive substance |

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| | |
|------------------------------------|--|
| | ※UN TDG test & Criteria- Test E3 |
| Oxidizing property | Not a oxidative substance, steady decomposed to O ₂ gas |
| | ※UN TDG test & Criteria- Test O2 |
| Vapor Pressure | No data available |
| Evaporation Rate (Butyl Acetate=1) | |
| | No data available |
| Critical Temperature | No data available |
| n-Octane/Water Dist. Coeff. | No data available |
| Volatility | No data available |
| Lower explosive limit | No data available |
| Upper explosive limit | No data available |

10. Stability & Reactivity

| | |
|------------------------|---|
| Stability | Steadily decomposed to oxygen gas |
| Conditions to avoid | No decomposition if used according to specification Open flames, elevated temperatures, any source of heat, combustibles such as paper and wood and contamination. For quality purposes, avoid temperatures above 40 °C. Higher temperatures will accelerate decomposition resulting in a loss of assay. |
| Incompatible materials | Heavy metals, iron, copper, copper alloys, brass, aluminum, alkali, caustic, chlorine. |

11. Toxicological Information

| | |
|-------------------------------------|---|
| Acute Oral LD ₅₀ : | Rat 1,349 mg/kg ※from IUCLID,US NML <2,000 mg/kg (Rat, OECD) ※by Toxikon Lab |
| Inhalation LC ₅₀ (mist): | Rat 11 mg/L (4 hrs) ※from IUCLID,US NML |
| Inhalation toxicity | No data available ※from IUCLID,US NML |
| Dermal LD ₅₀ : | Rabbit 4238 mg/kg ※from IUCLID,US NML |
| Acute Dermal Irritation | Non-toxic (Rabbit, OECD) ※by Toxikon Lab |
| Primary ocular irritation | Mild Irritant (Rabbit, OECD) ※by Toxikon Lab |
| Primary skin | Non-irritation (Rabbit, ISO) ※by Nelson Lab |
| Skin sensitization | Non-irritation (Guinea Pig, ISO) ※by Nelson Lab |
| Carcinogenicity | |
| | IARC: Group 3: Not classifiable |
| Germ cell mutagenicity | Not classifiable by CCDC |
| Specific target organ toxicity | Potential toxic in repeated exposure ※from IUCLID/US HSDB |

12. Ecological information

Toxicity

| | |
|-------------------------------|------------------------------|
| Fish LC50 | 30 mg/L(96 hrs) ※from IUCLID |
| Crustacean EC 50 | 36 mg/L(48 hrs) |
| Algae EC 50 | 42 mg/L(96 hrs) |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Other adverse effects | No data available |

13. Disposal considerations

Waste treatment methods

| | |
|----------------------|-------------------------------------|
| Product | Dispose according to the regulation |
| Contaminated packing | Dispose o as unused product |

14. Transport information

UN Department of Transportation (DOT)

UN No: 3149

Class: 5.1

Proper shipping Name: Hydrogen Peroxide and Peroxyacetic Acid Mixture, with Acids, Water and not more than 6% Peroxyacetic Acid, Stabilized

International Maritime Dangerous Goods (IMDG)

UN No.: 3149

Class: 5.1

Packing group: II

Proper shipping name Hydrogen Peroxide and Peroxyacetic Acid Mixture, Stabilized with Acids, Water and not more than 6% Peroxyacetic Acid

International Air Transport Association (IATA)

UN number: 3149

Class: 5.1

Packing group: II

Proper shipping name: Hydrogen Peroxide and Peroxyacetic Acid Mixture, Stabilized with Acids, Water and not more than 6% Peroxyacetic Acid

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| | |
|------------------------------------|---|
| Marine pollutant | Not applicable |
| Special precaution for user | In Fire, accidental action (Recommend): F-H In release, accidental action (Recommend): S-Q |

15. Regulatory information

GHS classification

| | |
|--------------------------------|---|
| Physiochemical hazard | Corrosive/ Category1 |
| Skin/ eye corrosive | Category1 |
| Specific target organ toxicity | Category 1 (Target organ: eye, lung, respiratory organ) |
| Acute toxicity, Oral | Category 4 |
| Chronic aquatic toxicity | Category 2 |
| United States OSHA hazards | Oxidizer, target organ effect, toxic ingestion, corrosive |

16. Other information

Reference

Hazard classification Korea MSDS Testing Institute Test Certificate(Report No. 2011-02-12-297)

Physical property value Korea MSDS testing center test certificate
IUCLID, EC ESIS

UN transportation information

UN TDG UN Recommendation on the Transport of Dangerous Goods; Model Regulation

IMDG Code International marine dangerous goods code, IATA
Dangerous goods regulations
, IATA Dangerous goods regulations

Toxicity and environmental information

OECD SIDS, IUCLID, US NLM, IARC, EC ESIS,
CCDC(Chesnee for Disease control and Prevention)

Further information

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