

Material Safety Data Sheet



Image Maker Thermal Control Exothermic Perm - Thermolizer

1. Product and company identification

| | |
|---------------------------------|---|
| Product name | : Image Maker Thermal Control Exothermic Perm - Thermolizer |
| Manufacturer | : Zotos International, INC 100 Tokeneke Road, Darien, CT 06820 www.zotos.com |
| Validation date | : 8/13/2012. |
| In case of emergency | : (800) 584-8038 [24 Hours] |
| Telephone number | : (203) 656-7859 [8:30 a.m. - 5:00 p.m.] |
| Transportation Emergency | : Contact: CHEMTREC 1-800-424-9300 [US/Canada 24 Hours] |
| Product type | : Liquid. |

2. Hazards identification

Emergency overview

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Color : Off-white.

Odor : Fragrant.

Hazard statements : HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

Precautionary measures : Do not breathe vapor or mist. Do not ingest. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

OSHA/HCS status : None.

Potential acute health effects

Inhalation : None known.

Ingestion : Mild irritant

Skin : Prolonged exposure may result in skin burns and ulcerations.

Eyes : Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms : None identified.

Medical conditions aggravated by over-exposure : None.

See toxicological information (Section 11)

3. Composition/information on ingredients

United States

| Name | CAS number | % |
|-------------------|------------|------|
| hydrogen peroxide | 7722-84-1 | 3.65 |
| propane-1,2-diol | 57-55-6 | 1.75 |

Canada

| Name | CAS number | % |
|-------------------|------------|------|
| hydrogen peroxide | 7722-84-1 | 3.65 |
| propane-1,2-diol | 57-55-6 | 1.75 |

Mexico

| Name | CAS number | UN number | % | IDLH | Classification | | | |
|-------------------|------------|----------------|------|--------|----------------|---|---|---------|
| | | | | | H | F | R | Special |
| hydrogen peroxide | 7722-84-1 | UN3287 | 3.65 | 75 ppm | 2 | 0 | 0 | - |
| propane-1,2-diol | 57-55-6 | Not available. | 1.75 | - | 2 | 1 | 0 | - |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if you feel unwell.
- Skin contact** : Wash the contaminated skin gently and thoroughly with running water and non-abrasive soap.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if you feel unwell.
- Ingestion** : Call physician immediately.
- Protection of first-aiders** : Use suitable protective equipment (section 8).
- Notes to physician** : Treat symptomatically.

5. Fire-fighting measures

- Flammability of the product** : None.
- Extinguishing media** : Extinguish fire using an agent suitable for the surrounding fire.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
- Special protective equipment for fire-fighters** : In a fire, decomposition may produce toxic gases/fumes. Wear suitable protective clothing.

6. Accidental release measures

- Personal precautions** : Rubber gloves.
- Environmental precautions** : Store in a cool, well-ventilated, dry place. NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
- Methods for cleaning up** : Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Place spilled material in an appropriate container for disposal. After contact with skin, wash immediately with plenty of water.

7. Handling and storage

- Handling** : Avoid contact with skin and eyes. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10).
- Storage** : Store in a cool, well-ventilated, dry place. Store in a dry place at low temperature away from ignition and heat sources. Avoid increased storage temperature.

8. Exposure controls/personal protection

United States

| Ingredient | Exposure limits |
|-------------------|--|
| hydrogen peroxide | <p>ACGIH TLV (United States, 3/2012). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> <p>NIOSH REL (United States, 6/2009). TWA: 1 ppm 10 hour(s). TWA: 1.4 mg/m³ 10 hour(s).</p> <p>OSHA PEL (United States, 6/2010). TWA: 1 ppm 8 hour(s). TWA: 1.4 mg/m³ 8 hour(s).</p> |
| propane-1,2-diol | <p>AIHA WEEL (United States, 10/2011). TWA: 10 mg/m³ 8 hour(s).</p> |

Canada

| Occupational exposure limits | | TWA (8 hours) | | | STEL (15 mins) | | | Ceiling | | | Notations |
|------------------------------|-----------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|------------|
| Ingredient | List name | ppm | mg/m ³ | Other | ppm | mg/m ³ | Other | ppm | mg/m ³ | Other | |
| hydrogen peroxide | US ACGIH 3/2012 | 1 | 1.4 | - | - | - | - | - | - | - | [3] |
| | AB 4/2009 | 1 | 1.4 | - | - | - | - | - | - | - | |
| | BC 9/2011 | 1 | - | - | - | - | - | - | - | - | |
| | ON 7/2010 | 1 | 1.4 | - | - | - | - | - | - | - | |
| propane-1,2-diol | QC 9/2011 | 1 | 1.4 | - | - | - | - | - | - | - | [a] [b] |
| | ON 7/2010 | - | 10 | - | - | - | - | - | - | - | |
| | US AIHA 10/2011 | 50 | 155 | - | - | - | - | - | - | - | |

[3]Skin sensitization

Form: [a]Aerosol only. [b]Vapour and aerosol.

Mexico

Occupational exposure limits

| Ingredient | Exposure limits |
|-------------------|--|
| hydrogen peroxide | <p>NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 1 ppm 8 hour(s). LMPE-PPT: 1.5 mg/m³ 8 hour(s). LMPE-CT: 3 mg/m³ 15 minute(s). LMPE-CT: 2 ppm 15 minute(s).</p> |

Consult local authorities for acceptable exposure limits.

8. Exposure controls/personal protection

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : In case of insufficient ventilation, wear suitable respiratory equipment.
- Hygiene measures** : When using do not eat, drink or smoke.
- Personal protection**
- Respiratory** : In case of insufficient ventilation, wear suitable respiratory equipment.
- Hands** : None.
- Eyes** : None.
- Skin** : Wear suitable protective clothing.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Other protection** : Not available.

9. Physical and chemical properties

- Physical state** : Liquid. [Viscous liquid.]
- Flash point** : Closed cup: Not applicable.
- Color** : Off-white.
- Odor** : Fragrant.
- pH** : 3 to 4
- Boiling/condensation point** : >100°C (>212°F)
- Relative density** : 1.004 to 1.01

10. Stability and reactivity

- Chemical stability** : Not available.
- Conditions to avoid** : Not available.
- Incompatible materials** : Reducing agents metals
- Hazardous decomposition products** : Contaminated product generates oxygen gas pressure build-up
- Possibility of hazardous reactions** : Not available.
- Hazardous polymerization** : Not available.

11. Toxicological information

United States

Acute toxicity

| Product/ingredient name | Result | Dose | Exposure |
|-------------------------|-----------------------|-------------|----------|
| hydrogen peroxide | LC50 Inhalation Vapor | 2 g/m3 | 4 hours |
| | LD50 Dermal | 3 g/kg | - |
| | LD50 Oral | 376 mg/kg | - |
| propane-1,2-diol | LD50 Dermal | 20800 mg/kg | - |
| | LD50 Oral | 20 g/kg | - |

- Conclusion/Summary** : Not available.
- Chronic toxicity**
- Conclusion/Summary** : Not available.
- Irritation/Corrosion**

11. Toxicological information

| Product/ingredient name | Result | Score | Exposure | Observation |
|---------------------------------------|--------------------------|-------|--------------------------------------|-------------|
| hydrogen peroxide propane-1,2-diol | Eyes - Severe irritant | - | 1 milligrams | - |
| | Eyes - Mild irritant | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | - | 100 milligrams | - |
| | Skin - Moderate irritant | - | 96 hours 30 Percent continuous | - |
| | Skin - Mild irritant | - | 168 hours 500 milligrams | - |
| | Skin - Moderate irritant | - | 72 hours 104 milligrams Intermittent | - |
| | Skin - Mild irritant | - | 96 hours 30 Percent | - |

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : No carcinogenic effect.

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| hydrogen peroxide | A3 | 3 | - | - | - | - |

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Canada

Acute toxicity

| Product/ingredient name | Result | Dose | Exposure |
|-------------------------|-----------------------|-------------|----------|
| hydrogen peroxide | LC50 Inhalation Vapor | 2 g/m3 | 4 hours |
| | LD50 Dermal | 3 g/kg | - |
| | LD50 Oral | 376 mg/kg | - |
| propane-1,2-diol | LD50 Dermal | 20800 mg/kg | - |
| | LD50 Oral | 20 g/kg | - |

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

| Product/ingredient name | Result | Score | Exposure | Observation |
|---------------------------------------|--------------------------|-------|-------------------------|-------------|
| hydrogen peroxide propane-1,2-diol | Eyes - Severe irritant | - | 1 milligrams | - |
| | Eyes - Mild irritant | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | - | 100 milligrams | - |
| | Skin - Moderate irritant | - | 96 hours 30 Percent | - |

11. Toxicological information

| | | | | |
|--|--------------------------|---|---|---|
| | Skin - Mild irritant | - | continuous 168 hours 500 milligrams | - |
| | Skin - Moderate irritant | - | 72 hours 104 milligrams | - |
| | Skin - Mild irritant | - | Intermittent 96 hours 30 Percent | - |

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| hydrogen peroxide | A3 | 3 | - | - | - | - |

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Mexico**Acute toxicity**

| Product/ingredient name | Result | Dose | Exposure |
|-------------------------|-----------------------|-------------|----------|
| hydrogen peroxide | LC50 Inhalation Vapor | 2 g/m3 | 4 hours |
| | LD50 Dermal | 3 g/kg | - |
| | LD50 Oral | 376 mg/kg | - |
| propane-1,2-diol | LD50 Dermal | 20800 mg/kg | - |
| | LD50 Oral | 20 g/kg | - |

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

| Product/ingredient name | Result | Score | Exposure | Observation |
|-------------------------|--------------------------|-------|---|-------------|
| hydrogen peroxide | Eyes - Severe irritant | - | 1 milligrams | - |
| propane-1,2-diol | Eyes - Mild irritant | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | - | 100 milligrams | - |
| | Skin - Moderate irritant | - | 96 hours 30 Percent | - |
| | Skin - Mild irritant | - | continuous 168 hours 500 milligrams | - |
| | Skin - Moderate irritant | - | 72 hours 104 milligrams | - |
| | Skin - Mild irritant | - | Intermittent 96 hours 30 Percent | - |

Conclusion/Summary : Not available.

11. Toxicological information

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| hydrogen peroxide | A3 | 3 | - | - | - | - |

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

THE FOLLOWING DATA IN THIS SECTION IS SOURCED FROM PUBLICLY AVAILABLE DATABASES AND NOT THE REPRESENTATION OF ANY DATA COLLECTED BY ZOTOS INTERNATIONAL OR ITS AFFILIATES.

Ecotoxicity : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|-------------------------------------|--|----------|
| hydrogen peroxide | Acute EC50 1.2 mg/L Marine water | Algae - Dunaliella tertiolecta - Exponential growth phase | 72 hours |
| | Acute EC50 5.38 mg/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 2320 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <24 hours | 48 hours |
| | Acute LC50 22 ppm Fresh water | Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| propane-1,2-diol | Acute EC50 >1000 mg/L Fresh water | Daphnia - Daphnia magna - <24 hours | 48 hours |
| | Acute LC50 1020000 ug/L Fresh water | Crustaceans - Ceriodaphnia dubia - <24 hours | 48 hours |
| | Acute LC50 710000 ug/L Fresh water | Fish - Pimephales promelas - <=7 days | 96 hours |

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

Canada

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|-----------------------------------|--|----------|
| hydrogen peroxide | Acute EC50 1.2 mg/L Marine water | Algae - Dunaliella tertiolecta - Exponential growth phase | 72 hours |
| | Acute EC50 5.38 mg/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 2320 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <24 hours | 48 hours |
| | Acute LC50 22 ppm Fresh water | Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| propane-1,2-diol | Acute EC50 >1000 mg/L Fresh water | Daphnia - Daphnia magna - <24 | 48 hours |

12. Ecological information

| | | | |
|--|-------------------------------------|---|----------|
| | Acute LC50 1020000 ug/L Fresh water | hours Crustaceans - Ceriodaphnia dubia - <24 hours | 48 hours |
| | Acute LC50 710000 ug/L Fresh water | Fish - Pimephales promelas - <=7 days | 96 hours |

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

Mexico

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|-------------------------------------|--|----------|
| hydrogen peroxide | Acute EC50 1.2 mg/L Marine water | Algae - Dunaliella tertiolecta - Exponential growth phase | 72 hours |
| | Acute EC50 5.38 mg/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 2320 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <24 hours | 48 hours |
| | Acute LC50 22 ppm Fresh water | Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| propane-1,2-diol | Acute EC50 >1000 mg/L Fresh water | Daphnia - Daphnia magna - <24 hours | 48 hours |
| | Acute LC50 1020000 ug/L Fresh water | Crustaceans - Ceriodaphnia dubia - <24 hours | 48 hours |
| | Acute LC50 710000 ug/L Fresh water | Fish - Pimephales promelas - <=7 days | 96 hours |

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal : Dispose of according to all federal, state and local applicable regulations.

Contaminated packaging : Waste must be disposed of according to applicable regulations. This material and its container must be disposed of as hazardous waste.

Waste residues information : Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|------------------------------|----------------|----------------------|---------|-----|-------|------------------------|
| DOT Classification | Not regulated. | - | - | - | | - |
| TDG Classification | Not regulated. | - | - | - | | - |
| Mexico Classification | Not regulated. | - | - | - | | - |
| ADR/RID Class | Not regulated. | - | - | - | | - |

14. Transport information

| | | | | | |
|-----------------------|----------------|---|---|---|---|
| IMDG Class | Not regulated. | - | - | - | - |
| IATA-DGR Class | Not regulated. | - | - | - | - |

PG* : Packing group

15. Regulatory information

United States

HCS Classification : Toxic material
Irritating material
Target organ effects

U.S. Federal regulations : TSCA : Exempt

SARA 302/304/311/312 extremely hazardous substances: hydrogen peroxide

SARA 302/304 emergency planning and notification: hydrogen peroxide

SARA 302/304/311/312 hazardous chemicals: propane-1,2-diol; hydrogen peroxide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

propane-1,2-diol: Immediate (acute) health hazard, Delayed (chronic) health hazard;
hydrogen peroxide: Fire hazard, reactive, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 311: Phosphoric acid

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : The following components are listed: HYDROGEN PEROXIDE

New York : The following components are listed: Hydrogen peroxide

New Jersey : The following components are listed: HYDROGEN PEROXIDE; PROPYLENE GLYCOL; 1,2-PROPANEDIOL

Pennsylvania : The following components are listed: HYDROGEN PEROXIDE (CONC > 52 PERCENT); 1,2-PROPANEDIOL

California Prop. 65

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product is not known to the State of California to cause cancer.

United States inventory (TSCA 8b) : Not determined.

Canada

WHMIS (Canada) : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class E: Corrosive material

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

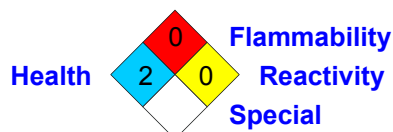
Canada inventory : All components are listed or exempted.

15. Regulatory information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Mexico

Classification :



International regulations

Chemical Weapons : Not listed

Convention List Schedule I
Chemicals

Chemical Weapons : Not listed

Convention List Schedule
II Chemicals

Chemical Weapons : Not listed

Convention List Schedule
III Chemicals

16. Other information

Hazardous Material :
Information System (U.S.A.)

| | |
|------------------|---|
| Health | 2 |
| Flammability | 0 |
| Physical hazards | 0 |
| | |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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National Fire Protection :
Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of printing : 9/9/2013.
Date of issue : 8/13/2012.
Date of previous issue : No previous validation.

16. Other information

Version : 2
Prepared by : Regulatory Affairs Group

✔ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.