Material Safety Data Sheet

GERMABEN® II

Chemical Products Company Identification

Product Name: GERMABEN® II
CAS Registry Number: 57-55-6; 78491-02-8; 99-76-3; 94-13-3
CAS Registry Name: 1,2-Propanediol; Urea. N-(1,3-bis(hydroxymethyl)-2,5-dioxo-4-imidazolidinyl)-N,N'-bis(hydroxymethyl)-; Benzoic acid, 4-hydroxy-, 1-methyl ester; Benzoic acid. 4-hydroxy-, propyl ester
Synonyms: Propylene Glycol; Diazolidinyl Urea; Methylparaben; Propylparaben (INCI NAMES)
Product Use: Preservative

Composition Information/Hazardous Ingredients

Component: 1,2-Propanediol
Weighted Average (TWA): 5745.8 (58)
No TLV/TWA Established
No TLV/TWA Established
No TLV/STEL Established
No TLV/STEL Established


Hazardous Identification

Emergency Overview

CAUTION! CAUSES MILD EYE IRRITATION. CAUSES MILD SKIN IRRITATION.

Target Organs: Skin/ Eyes
Primary Entry Routes: Dermal - skin. Eyes.
Acute Health Hazards: Causes mild eye irritation. Causes mild skin irritation.
Chronic Health Hazards: Unknown

Signs and Symptoms of overexposure

Eye Contact: Causes mild eye irritation
Skin Contact: Causes mild skin irritation.
Ingestion: Not a hazard under normal use conditions.
Inhalation: Not a hazard under normal use conditions.
First Aid Measures

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Contact: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if symptoms occur.

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Fire Fighting Measures

NFPA Rating: Health: 1 Flammability: 1 Reactivity: 0

Flash Point (°F): 199.4

Extinguishing Media: All standard firefighting media

Unusual Fire/Explosion Hazards: Unknown

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

HMIS RATING:
- HEALTH 1
- FLAMMABILITY 1
- REACTIVITY 0

Accidental Release Measures

Personal Precautionary Measures: Use appropriate protective equipment.

Procedure for Cleaning/Absorption: Contain spill with sand or other inert materials

Handling/Storage

Handling: Avoid contact with skin and eyes. Wash thoroughly with soap and water after handling. May produce sensitization to damaged exposed skin (as sold) (See Toxicological Section 11). Wear appropriate PPE.

Storage: Keep containers tightly closed when not in use. Store in a cool, dry place, out of direct sunlight.

Exposure Controls/Personal Protection

Engineering Controls: Use in a well ventilated area.

Respiratory Protection: Use in a well ventilated area

Hand Protection: All cleanable impervious glove types are acceptable.

Eye Protection: Safety glasses.
Physical Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>CLEAR TO PALE YELLOW</td>
</tr>
<tr>
<td>Odor</td>
<td>CHARACTERISTIC, MILD</td>
</tr>
<tr>
<td>pH</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.18</td>
</tr>
<tr>
<td>Boiling Point ('F)</td>
<td>369</td>
</tr>
<tr>
<td>Melting Point ('F)</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.22 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>1/59/1009 @25°C</td>
</tr>
</tbody>
</table>

Stability & Reactivity

- Chemical Stability: Stable under normal conditions of handling, use and transportation.
- Hazardous Polymerization: Will not occur
- Conditions to Avoid: None anticipated

Toxicological Information

- Toxicity Test:
  - Acute Oral LD50 (mg/kg):
    - 20,000 (Propylene Glycol)
    - 2,570 (Diazolidinyl Urea)
    - >5,600 (Methylparaben)
    - 6,332 (Propylparaben)
  - Acute Dermal LD50 (mg/kg):
    - >2,000 (Diazolidinyl urea) (rabbit)
    - 31,000 (Propylene Glycol) (rabbit)
  - Acute Inhalation LC50 (mg/l): 1.3 mg/kg (rat) (Diazolidinyl urea, 50% Aqueous solution)
- Sensitization:
  - Non-sensitizing (0.5% aqueous solution) (Human RIFT) (Diazolidinyl urea)
  - Non-sensitizing to guinea pigs (0.1% aqueous solution) (Diazolidinyl urea)
  - Slight sensitizer to guinea skin in Guinea Pig Maximization Test (5% aqueous solution injection) (Diazolidinyl urea)
- Mutagenicity:
  - Non-mutagenic (Propylene Glycol)
  - Non-mutagenic (Ames assay). (Diazolidinyl urea)
  - Non-mutagenic (Ames assay & Dominant lethal assay) (Methylparaben).
  - Non-mutagenic Ames assay with and without metabolic activation (Propylparaben)
- Teratogenicity:
  - Non-teratogenic (Propylene Glycol)
  - Non-teratogenic in rats dosed orally with 125, 250 or 500 mg/kg day.
  - Non-teratogenic in rats receiving dermally 30-300 mg/kg/day from days 6-15 of gestation. (Diazolidinyl urea)
  - Non-teratogenic in rabbits dosed orally with 3-300 mg/kg. Non-teratogenic in rats and mice receiving 5-500 mg/kg gestation days 6-18. (Methylparaben)
  - Mildly irritating to rabbit skin at 100%. (Methylparaben)
  - Minimally irritating to rabbit skin (0.3% in product formulation). (Propylparaben)
  - Mildly irritating to human skin (Propylene glycol).
  - Non-irritating to human skin (0.5% aqueous solution. Diazolidinyl urea)
Non-irritating to rabbit (5% aqueous solution) and guinea pig skin (100% wettable powder) (Diazolidinyl urea)

Eye Irritation:
- Mildly irritating to rabbit eye (Propylene glycol)
- Miry irritating to rabbit eye (50% aqueous solution) (Diazolidinyl urea)
- Non-irritating to rabbit eye (1 & 5 % aqueous solutions) (Diazolidinyl urea)
- Practically non-irritating to rabbit eye (100% Methylparaben)
- Minimally irritating to rabbit eye. (up to 8% in formulations) (Propylparaben)

Other Information:
- Phototoxicity: Non-phototoxic (0.5% Diazolidinyl urea)
- Phototoxicity: Non-phototoxic (Propylparaben)
- Phototoxicity: Non-phototoxic (Methylparaben)

Subchronic Oral Toxicity: Rats fed diets containing 0-60,000 ppm of Propylene Glycol for 15 weeks. The Propylene Glycol in the feed corresponded to a dose of 2.50 g/day. No significant differences were found between the control & Propylene Glycol dosed animals.

Subchronic Oral Toxicity: Rat 90; 10, 25, 100 mg/kg/day - no observed adverse effect level (NOAEL) 100 mg/kg/day (Diazolidinyl urea)
21lday; 100, 300, 900 mg/kg, no observed adverse effect level (NOAEL) 100 mg/kg/day (Diazolidinyl urea)

Photosensitization: Non-sensitizing to guinea pig skin. (0.5% Diazolidinyl urea)

Phototoxicity: Non-phototoxic (Propylparaben)

Ecological INFORMATION

Aquatic Toxicity:
- Daphnia Magna, 48 hr. EC50: 34.9 mg/L; NOEL 21.6 mg/L
- Slueglis, 96 hr. LC50: 100 mg/L
- Rainbow trout, 96 hr. LC50: >100 mg/L
- NOEL 100 mg/L Acute Oral LD60: X2,250 mg/kg (Northern bobwhite)

5-Day sub acute dietary studies produced no evidence of toxicity at concentrations up to 5,620 ppm. (Diazolidinyl urea)

Disposal Consideration

Disposal of Waste Method:
Federal, state and local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.
Transport Information

Land Transportation:
DOT (Non-Bulk):
DOT Shipping Name: NOT REGULATED
UNINA Number: NONE
Hazard Class: NONE

DOT (Bulk):
DOT Shipping Name: NOT REGULATED
UNINA Number: NONE
Hazard Class: NONE

Air Transportation fIATAI:
Proper Shipping Name: Not Regulated
UN Number: NONE
Hazard Classification: None

Sea Transportation 0191
Proper Shipping Name: NOT REGULATED
UNIID Number: None
Hazard Classification: None

TDG (Canada):
Proper Shipping Name: NOT REGULATED
UN Number: NONE
Hazard Class: NONE
### Disposal Consideration

- **TSCA Inventory List**: This product and/or its components is listed on TSCA.

<table>
<thead>
<tr>
<th>List</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Proposition 65 CALPROP. Carcinogens S Reproductive Toxicity (CRT) List -</td>
<td>None of the components of this product is listed on one or more components of this product is listed on WHMIS Ingredient Disclosure List.</td>
</tr>
<tr>
<td>THMIS Ingredient Disclosure</td>
<td></td>
</tr>
<tr>
<td>Canada DSL Inventory List -</td>
<td>This product and/or its components is listed on DSL.</td>
</tr>
<tr>
<td>Canada NDSL Inventory List -</td>
<td>This product and/or its components is not listed on NDSL.</td>
</tr>
<tr>
<td>Japan Inventory of Existing &amp; New Chemical Substances (ENCS) -</td>
<td>This product end/or its components is not listed.</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS) List -</td>
<td>This product and/or its components is listed on AICS.</td>
</tr>
<tr>
<td>EU EINECS List -</td>
<td>This product and/or its components is listed on EINECS.</td>
</tr>
<tr>
<td>EU ELINCS List -</td>
<td>This product and/or its components is not listed on ELINCS.</td>
</tr>
</tbody>
</table>