



# MATERIAL SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Disal<sup>®</sup> Injection (Furosemide)

**Product No.:** NADA 131-538

**MSDS ID#:** P131-538

**GHS Product Identifier:** Not applicable

Molecular Formula: Mixture, not applicable

Molecular Weight: Not applicable

CAS Number: Mixture, not applicable

Chemical Family: Diuretic

**Manufacturer:**

Boehringer Ingelheim Vetmedica, Inc.

2621 North Belt Hwy

St. Joseph, MO 64506-2002

**Transportation Emergency:** For Chemical  
Emergency Spill, Leak, Fire, Exposure, or  
Accident Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887  
(collect calls accepted)

**Medical Emergency (24HR):** (866) 638-2226

**Non-Emergency Telephone:** (800) 821-7467

**Intended Use:** For use in the treatment of  
acute non-inflammatory tissue edema in  
animals.

## 2 HAZARDS IDENTIFICATION

**Emergency Overview**

**Physical State:** Liquid packaged in 50 mL or 100 mL bottles.

**Color:** Colorless

**Odor:** Odorless



**DANGER!**

**May be harmful if swallowed.**

**Contains a component that may cause reproductive effects.**

**Chronic exposure potential is not expected.**

**Allergic reactions can occur.**

**For use in animals only.**

**Not for human use.**

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.

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

Use personal protective equipment as required.

**Response:**

If exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container according to applicable federal and local regulations.

**Additional statements:**

Keep only in original container.

Keep at a temperature between 15°-30°C (59-86°F).

Accidental human injection can cause serious local reactions or anaphylactic reaction and systemic effects.

Wear suitable gloves and eye/face protection.

Avoid contact with eyes, skin and clothing.

Wash thoroughly with soap and water after handling.

If swallowed, seek medical advice immediately and show this container or label.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Spills: Absorb spilled substance with inert material and sweep into appropriate waste containers

Keep out of reach of children.

Keep away from food, drink, and animal feedstuffs.

**Potential Health Effects**

**Inhalation:** Not expected to be an inhalation hazard with prescribed use.

**Eye Contact:** Not expected to be a hazard to the eye with prescribed use. Exposure to liquid in eye may cause eye irritation.

**Skin Contact:** Not expected to be a hazard to the skin with prescribed use. May cause skin irritation. May cause skin sensitization by contact. Can cause hypersensitive reactions.

**Ingestion:** May be harmful if swallowed. Ingestion may cause nausea, vomiting, diarrhea, and systemic effects.

**Injection:** Swelling at injection site may occur.

**Chronic Health Effects:** Possible hypersensitization (development of abnormal sensitivity). Contains furosemide. Furosemide has been reported to cause reproductive effects in animals. Excessive amounts may lead to electrolyte imbalance, severe dehydration and reduction in plasma volume.

**Target Organ(s):** Skin, eyes, reproductive organs, heart, blood.

**OSHA Regulatory Status:** Hazardous (Exempt)

**Environment:** No data available

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name    | EC No.    | CAS- No. | Concentration | Classification       | Notes |
|------------------|-----------|----------|---------------|----------------------|-------|
| Furosemide       | 200-203-6 | 54-31-9  | 50 mg/mL      | Xn, R63              | ---   |
| Monoethanolamine | 205-483-3 | 141-43-5 | 1%            | C, R34,<br>R20/21/22 | ---   |

Components not listed are not hazardous or are below reportable limits.

The full texts for all R-Phrases are displayed in Section 16, if applicable.

### 4 FIRST AID MEASURES

**General:** Animals or persons developing anaphylactic (life-threatening) reactions, such as difficulty in breathing or unconsciousness, must receive immediate medical attention.

**Inhalation:** Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

**Eye Contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation or rash occurs, seek medical advice. Wash contaminated clothing before reuse.

**Ingestion:** Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**Injection:** In case of accidental injection, wash the site thoroughly. Contact a physician immediately.

**Note to Physician:** For animal injection only. Not for human use.

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| <b>5</b> | <b>FIRE-FIGHTING MEASURES</b> |
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**Extinguishing Media:** Extinguish with foam, carbon dioxide, dry powder and water fog or material appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** None known

**Special Fire Fighting Procedures:** Wear self-contained breathing apparatus and protective clothing.

**Unusual Fire & Explosion Hazards:** None known

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides, sulfur oxides, hydrogen chloride

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| <b>6</b> | <b>ACCIDENTAL RELEASE MEASURES</b> |
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**Personal Precautions:** Wear appropriate personal protective equipment (See Section 8).

**Spill Cleanup Methods:** STEPS TO BE TAKEN IF SIGNIFICANT QUANTITIES OF PRODUCT IS SPILLED: Absorb or cover with dry earth, sand or other non-combustible material. Place spillage in appropriate container for waste disposal. Wash contaminated clothing before use.

**Environmental Precautions:** Prevent runoff from entering drains, sewers or streams. Dike for later disposal.

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| <b>7</b> | <b>HANDLING AND STORAGE</b> |
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**Handling:** HANDLING SIGNIFICANT QUANTITIES OF PRODUCT: Avoid contact with eyes, skin or clothing. Avoid accidental injection. Wash hand thoroughly after handling.

**Storage:** Keep only in the original container. Store between 15°-30°C (59-86°F). Store out of direct sunlight. Keep from freezing.

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| <b>8</b> | <b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b> |
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**Exposure Limits:**

| Chemical Name | Source | Type | Exposure Limits | Notes                   |
|---------------|--------|------|-----------------|-------------------------|
| Ethanolamine  | ACGIH  | TWA  | 3 ppm           | Eye and skin irritation |
| Ethanolamine  | ACGIH  | STEL | 6 ppm           | ----                    |
| Ethanolamine  | OSHA   | PEL  | 3 ppm           | ----                    |

Where lower governmentally imposed exposure limits exist, such limits should take precedence.

**Engineering Controls:** Not generally required when handling vials or containers. Good ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Respiratory Protection:** Not generally required when handling vials or containers. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA standard 63 FR 1152, January 8, 1998. Respirator type: NIOSH approved organic vapor respirator.

**Europe: Wear appropriate personal protective equipment according to the Council Directive 89/686/EEC (4) and the appropriate CEN standards.**

**PERSONAL PROTECTIVE EQUIPMENT:** Not generally required when handling containers. If containers are compromised or exposure to the mixture is likely wear:

**Eye Protection:** Wear safety glasses with side shields (or goggles).

**Hand Protection:** Wear suitable gloves.

**Skin Protection:** Wear lab coat, apron or appropriate clothing to prevent skin contact.

**Hygiene Measures:** Eye bath, washing facilities

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| <b>9</b> | <b>PHYSICAL AND CHEMICAL PROPERTIES</b> |
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**Color:** Colorless

**Odor:** Odorless

**Odor Threshold:** No data available

**Physical State:** Liquid packaged in 50 mL or 100 mL bottles.

**pH:** 8.6

**Melting Point:** No data available

**Freezing Point:** No data available

**Boiling Point:** 100° C (212° F)

**Flash Point:** No data available

**Flammability Limit – Upper (%):** No data available

**Flammability Limit – Lower (%):** No data available

**Evaporation rate:** No data available

**Vapor Pressure:** No data available

**Vapor Density (Air=1):** No data available

**Specific Gravity:** 1.06

**Solubility:** Miscible in water

**Partition Coefficient (n-Octanol/water):** No data available

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

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| <b>10</b> | <b>STABILITY AND REACTIVITY</b> |
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**Stability:** Stable

**Conditions to Avoid:** Excessive heat, direct sunlight, freezing

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Carbon oxides, nitrogen oxides, sulfur oxides, hydrogen chloride

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

## 11 TOXICOLOGICAL INFORMATION

### Specified Substances

#### Acute Toxicity

| Chemical Name    | Test Results  |
|------------------|---|
| Furosemide       | Oral LD50 (rat): 2600 mg/kg   |
| Monoethanolamine | Administration into the eye, rabbit, 250 ug; severe irritation<br>Administration onto the skin, rabbit, 505 mg; moderate irritation<br>Oral LD50 (rat): 1720 mg/kg<br>Dermal LD50 (rabbit): 1 ml/kg |

**Chronic Toxicity** – Possible hypersensitization (development of abnormal sensitivity). Contains furosemide. Furosemide has been reported to cause reproductive effects in animals. Excessive amounts may lead to electrolyte imbalance, severe dehydration and reduction in plasma volume.

**Listed Carcinogens:** None listed.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** No data available

**Persistence and degradability:** No data available

**Mobility in soil:** No data available

**Other adverse effects:** No data available

**Germany WGK:** Monoethanolamine ID No: 94; Class 1: slightly water-endangering.

## 13 DISPOSAL CONSIDERATIONS

**General Information:** Dispose of in accordance with local, state, federal, national or international regulations.

**Disposal Methods:** No specific disposal method required. Do not empty into drains. Dispose of this material and its container in a safe way. Do not contaminate water, food, or feed by disposal.

**RCRA Information:** Not applicable

## 14 TRANSPORT INFORMATION

**DOT:** Not regulated

**TDG:** Not regulated

**ADR/RID:** Not regulated

**IATA:** Not regulated

**IMDG:** Not regulated

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| <b>15</b> | <b>REGULATORY INFORMATION</b> |
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**Canadian Controlled Products Regulations:** This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS Classification:** D/2/A, Exempt

**Inventory Status**

This material **is** listed on the following inventories: AICS, DSL, EINECS, ENCS, PICCS, KECI, and NZIoC.

This material is **not** listed on the following inventories: TSCA, and IECSC. Therefore, it can only be used for TSCA exempt purposes such as R&D or veterinary use.

**Canada CEPA Schedule 1** – None listed.

**US Regulations**

**FEDERAL LAW RESTRICTS THIS DRUG TO USE BY OR ON ORDER OF LICENSED VETERINARIANS.**

**CERCLA Hazardous Substance List (40 CFR 302.4):** None listed.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):** None listed.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):** None listed.

**SARA Title III**

**Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):** None listed.

**Section 311/312 (40 CFR 370):**

|                                     |                      |                                     |                      |                          |      |                          |          |                          |                        |
|-------------------------------------|----------------------|-------------------------------------|----------------------|--------------------------|------|--------------------------|----------|--------------------------|------------------------|
| <input checked="" type="checkbox"/> | Acute<br>(Immediate) | <input checked="" type="checkbox"/> | Chronic<br>(Delayed) | <input type="checkbox"/> | Fire | <input type="checkbox"/> | Reactive | <input type="checkbox"/> | Pressure<br>Generating |
|-------------------------------------|----------------------|-------------------------------------|----------------------|--------------------------|------|--------------------------|----------|--------------------------|------------------------|

**Section 313 Toxic Release Inventory (40 CFR 372):** None listed.

**State Regulations**

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** None listed

**Massachusetts Right-To-Know List:** Monoethanolamine

**Minnesota Hazardous Substances List:** Monoethanolamine

**New Jersey Right-To-Know List:** Monoethanolamine  
**Pennsylvania Right-To-Know List:** Monoethanolamine  
**Rhode Island Right-To-Know List:** Monoethanolamine

**European Regulations**

**Austria MAK List (Annex I):** Monoethanolamine  
**Denmark (Annex 3.6):** None listed  
**Germany (Dangerous Substances Ordinance 2004, Annex III):** None listed  
**Norway (List of Dangerous Substance):** Monoethanolamine  
**Sweden (Annex 3):** None listed  
**Switzerland (Toxins List 1):** Monoethanolamine

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| <b>16</b> | <b>OTHER INFORMATION</b> |
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**Hazard Ratings**

|             | Health Hazard | Fire Hazard | Reactivity Hazard |
|-------------|---------------|-------------|-------------------|
| <b>HMIS</b> | 1*            | 1           | 0                 |

|             | Health Hazard | Fire Hazard | Reactivity Hazard | Special Hazard |
|-------------|---------------|-------------|-------------------|----------------|
| <b>NFPA</b> | 1             | 1           | 0                 | N/A            |

\* – Chronic health effect; 0 – Minimal; 1 – Slight; 2 – Moderate; 3 – Serious; 4 – Severe

**EU Symbol and R Phrase Definitions :**

C – Corrosive.

Xn – Harmful.

R34 – Causes burns.

R20/21/22 – Harmful by inhalation, in contact with skin, and if swallowed.

R63 – Possible risk of harm to the unborn child.

**ABBREVIATIONS:**

BIV – Boehringer Ingelheim Vetmedica, Inc.

N/A – Not applicable

N/E – Not established

pph – parts per hour

ppm – parts per million

**References:**

1. Disal<sup>®</sup> Injection (Furosemide) MSDS and Label
2. Ariel WebInsight Regulatory Database. Regulatory Summary for North America, Western Europe, and Global Inventories Database.
3. GHS Manual

**Prepared by:** Boehringer Ingelheim Vetmedica, Inc.

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