

**Safety Data Sheet****Section 1: Identification****Product identifier**

- Product Name** • **Dorzolamide Hydrochloride Ophthalmic Solution 2%**  
**Product Code** • AB48509; Core No. 485; NDC 24208-0485-10

**Relevant identified uses of the substance or mixture and uses advised against**

- Recommended use** • Finished Pharmaceutical Product; Dorzolamide HCl Ophthalmic Solution is indicated in the treatment of elevated intraocular pressure in patients with ocular hypertension or open-angle glaucoma.
- Restrictions on use** • Refer to the product insert and/or prescribing information for restrictions on use and contraindications.

**Details of the supplier of the safety data sheet**

- Manufacturer** • Bausch & Lomb  
1400 North Goodman Street  
Rochester, NY 14609  
United States  
bausch.com
- Telephone (General)** • 1-800-553-5340

**Emergency telephone number**

- Manufacturer** • 1-800-535-5053 - Infotrac

*This safety data sheet is written to provide health, safety and environmental information for people handling this formulated product in the workplace. It is not intended to provide information relevant to consumer use of the product.*

**Section 2: Hazard Identification****UN GHS**

According to: **UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)**

**Classification of the substance or mixture**

- UN GHS** • Reproductive Toxicity 2  
Skin Mild Irritation 3  
Eye Mild Irritation 2B

**Label elements**

**UN GHS**

**WARNING**



**Hazard statements** • Causes mild skin irritation

Causes eye irritation  
Suspected of damaging fertility or the unborn child.

### Precautionary statements

**Prevention** ● Do not handle until all safety precautions have been read and understood.  
Wash thoroughly after handling.  
Use personal protective equipment as required.

**Response** ● IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

**Storage/Disposal** ● Keep tightly closed. Store at room temperature 20-25°C (68-77°F), to maintain product integrity. Use before date marked on carton and/or container.  
Protect from light.  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### Other hazards

**UN GHS** ● No data available

## Section 3 - Composition/Information on Ingredients

### Substances

- Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

### Mixtures

Composition			
Chemical Name	Identifiers	%	Classifications According to Regulation/Directive
Benzalkonium chloride	CAS:63449-41-2 EINECS:264-151-6	0.0075%	UN GHS: Skin Corr. 1B; Acute Tox. Oral 4; Acute Tox. Dermal 4; Aquatic Acute 1
Dorzolamide HCL	CAS:130693-82-2	2% TO 3%	UN GHS: NDA
Hydroxyethyl cellulose	CAS:9004-62-0	0.5%	UN GHS: Skin Irrit. 2; Eye Irrit. 2A
Mannitol	CAS:69-65-8 EINECS:200-711-8	1% TO 5%	UN GHS: NDA
Sodium Citrate	CAS:68-04-2 EINECS:200-675-3	< 1%	UN GHS: Eye Irrit. 2A
Sodium hydroxide	CAS:1310-73-2 EINECS:215-185-5	< 1%	UN GHS: Skin Corr. 1A
Water		Balance	UN GHS: Classification criteria not met

The exact percentage of composition has been withheld as a trade secret.

## Section 4: First-Aid Measures

### Description of first aid measures

#### Inhalation

- No inhalation exposure expected with this formulation under normal conditions of use. If signs/symptoms develop, get medical attention.

#### Skin

- Flush with fresh water if contact with skin or eyes. If skin irritation occurs: Get medical

- advice/attention.
- Eye**
- For accidental and non-therapeutic applications, flush eyes with copious amounts of water for at least 15 minutes. Get medical attention. If eye irritation persists: Get medical advice/attention.
- Ingestion**
- No specific treatment is necessary since this material is not likely to be hazardous by ingestion. If large quantities are accidentally ingested (greater than a tablespoon), get medical attention immediately.

### Most important symptoms and effects, both acute and delayed

- The following adverse events have occurred either at low incidence (<1%) during clinical trials or have been reported during the use of Dorzolamide HCl Ophthalmic Solution in clinical practice where these events were reported voluntarily from a population of unknown size and frequency of occurrence cannot be determined precisely. They have been chosen for inclusion based on factors such as seriousness, frequency of reporting, possible causal connection to Dorzolamide HCl Ophthalmic Solution, or a combination of these factors: signs and symptoms of systemic allergic reactions including angioedema, bronchospasm, pruritus, and urticaria; Stevens-Johnson syndrome and toxic epidermal necrolysis; dizziness, paresthesia; ocular pain, transient myopia, choroidal detachment following filtration surgery, eyelid crusting; dyspnea; contact dermatitis, epistaxis, dry mouth and throat irritation.

### Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- Electrolyte imbalance, development of an acidotic state, and possible central nervous system effects may occur. Serum electrolyte levels (particularly potassium) and blood pH levels should be monitored.

### Other information

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

## Section 5: Fire-Fighting Measures

### Extinguishing media

- Suitable Extinguishing Media**
- SMALL FIRES: Dry chemical, CO<sub>2</sub>, water spray or regular foam.  
LARGE FIRE: Water spray, fog or regular foam.

- Unsuitable Extinguishing Media**
- No data available

### Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- None known.

- Hazardous Combustion Products**
- None known.

### Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA).

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- No special controls or personal protection required under conditions of intended use. In the event of bulk spills, wear suitable protective eyewear, clothing, protective boots and protective gloves. Evacuate immediate area. Ensure adequate ventilation. Refer to Section 8.

- Emergency Procedures**
- Keep unauthorized personnel away. Ventilate closed spaces before entering. Stop leak if you can do it without risk.

### Environmental precautions

- Prevent spilled material from entering storm sewers or drains, waterways, and contact with soil.

## Methods and material for containment and cleaning up

### Containment/Clean-up Measures

- Contain spilled product. For small spills, add suitable absorbent material. Scoop up and place in an appropriate liquid-tight container equipped with a tight cover for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate, liquid-tight container equipped with a tight cover for disposal. Dispose of in accordance with Section 13.

## Section 7 - Handling and Storage

### Precautions for safe handling

#### Handling

- No special handling is required. Refer to Section 8. Use only in accordance with product literature. Use only in accordance with product literature.

### Conditions for safe storage, including any incompatibilities

#### Storage

- Keep tightly closed. Store at room temperature 20-25°C (68-77°F), to maintain product integrity. Use before date marked on carton and/or container. Protect from light.

#### Incompatible Materials or Ignition Sources

- None specified.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

#### Exposure Limits/Guidelines

- Refer to the occupational exposure limits / guidelines for the individual product components.

Exposure Limits/Guidelines					
	Result	ACGIH	Canada Quebec	NIOSH	OSHA
Sodium hydroxide (1310-73-2)	Ceilings	2 mg/m <sup>3</sup> Ceiling	2 mg/m <sup>3</sup> Ceiling	2 mg/m <sup>3</sup> Ceiling	Not established
	TWAs	Not established	Not established	Not established	2 mg/m <sup>3</sup> TWA

### Exposure controls

#### Engineering Measures/Controls

- Good general ventilation 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.

#### Personal Protective Equipment

##### Respiratory

- In the event of a bulk spill, and where risk assessment shows that air-purifying respirators are appropriate, a NIOSH (US) or CEN (EU) -certified air-purifying respirator equipped with HEPA cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, when adequate oxygen is present and as a backup to engineering controls. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release or any other circumstances where air purifying respirators may not provide adequate protection.

##### Eye/Face

- Wear protective eyewear (goggles, face shield, or safety glasses) when handling bulk product before closed in final packaging. In the event of a spill, appropriate eye protection should be worn.

##### Hands

- Wear appropriate gloves.

##### Skin/Body

- No special personal protection required under conditions of intended use. In the event of a bulk spill, wear appropriate protective clothing.

#### General Industrial Hygiene Considerations

- Wash thoroughly after handling.

**Environmental Exposure Controls**      • No data available

## Section 9 - Physical and Chemical Properties

### Information on Physical and Chemical Properties

<b>Material Description</b>			
Physical Form	Liquid	Appearance/Description	slightly viscous, aqueous solution.
Color	Colorless	Odor	No odor.
Odor Threshold	Not relevant		
<b>General Properties</b>			
Boiling Point	No data available	Melting Point	Not relevant
Decomposition Temperature	No data available	pH	5.65
Specific Gravity/Relative Density	= 1.016	Water Solubility	Soluble
Viscosity	No data available		
<b>Volatility</b>			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	No data available		
<b>Flammability</b>			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
<b>Environmental</b>			
Octanol/Water Partition coefficient	No data available		

## Section 10: Stability and Reactivity

### Reactivity

- No dangerous reaction known under conditions of normal use.

### Chemical stability

- Stable under normal temperatures and pressures.

### Possibility of hazardous reactions

- No data available

### Conditions to avoid

- Extreme heat or cold. Do not freeze.

### Incompatible materials

- No data available

### Hazardous decomposition products

- No data available

## Section 11 - Toxicological Information

### Information on toxicological effects

<b>Components</b>	
	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 1927 mg/kg; <i>Sense Organs and Special Senses:</i> Eye: <b>Ptosis</b> ;

Dorzolamide HCL (2% TO 3%)	130693-82-2	<b>Behavioral:Somnolence (general depressed activity); Behavioral:Ataxia;</b> <b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 12 mg/kg (6-17D preg); <b>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</b>
Mannitol (1% TO 5%)	69-65-8	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 13500 mg/kg
Sodium Citrate (< 1%)	68-04-2	<b>Acute Toxicity:</b> Intravenous-Mouse LD50 • 170 mg/kg; <b>Behavioral:Convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration:Cyanosis; Gastrointestinal:Changes in structure or function of salivary glands</b>
Benzalkonium chloride (0.0075%)	63449-41-2	<b>Acute Toxicity:</b> Ingestion/Oral-Mouse LD50 • 150 mg/kg; <b>Behavioral:Somnolence (general depressed activity); Blood:Hemorrhage</b>
Sodium hydroxide (< 1%)	1310-73-2	<b>Acute Toxicity:</b> Intraperitoneal-Mouse LD50 • 40 mg/kg

GHS Properties	Classification
Acute toxicity	UN GHS • Classification criteria not met
Aspiration Hazard	UN GHS • Classification criteria not met
Carcinogenicity	UN GHS • Classification criteria not met
Germ Cell Mutagenicity	UN GHS • Classification criteria not met
Skin corrosion/Irritation	UN GHS • Skin Mild Irritation 3
Skin sensitization	UN GHS • Classification criteria not met
STOT-RE	UN GHS • Classification criteria not met
STOT-SE	UN GHS • Classification criteria not met
Toxicity for Reproduction	UN GHS • Toxic to Reproduction 2
Respiratory sensitization	UN GHS • Classification criteria not met
Serious eye damage/Irritation	UN GHS • Eye Mild Irritation 2B

## Potential Health Effects

### Inhalation

- Acute (Immediate)**
  - Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)**
  - No data available.

### Skin

- Acute (Immediate)**
  - May cause mild irritation.
- Chronic (Delayed)**
  - No data available.

### Eye

- Acute (Immediate)**
  - May cause irritation.
- Chronic (Delayed)**
  - Refer to the product insert and/or product prescribing information for comprehensive information regarding adverse reactions and other important symptoms and effects. Under normal conditions of use, no health effects are expected.

### Ingestion

- Acute (Immediate)**
  - Not expected to be an exposure route. However, may cause gastric and intestinal irritation if ingested.
- Chronic (Delayed)**
  - No data available.

Carcinogenic Effects		
	CAS	NTP
Mannitol	69-65-8	Evidence of Carcinogenicity

**Reproductive Effects**

- Developmental toxicity studies with dorzolamide hydrochloride in rabbits at oral doses of  $\times 2.5$  mg/kg/day (31 times the recommended human ophthalmic dose) revealed malformations of the vertebral bodies. These malformations occurred at doses that caused metabolic acidosis with decreased body weight gain in dams and decreased fetal weights. No treatment-related malformations were seen at 1.0 mg/kg/day (13 times the recommended human ophthalmic dose). There are no adequate and wellcontrolled studies in pregnant women.

**Section 12 - Ecological Information****Toxicity**

- This material has not been tested for environmental effects.

**Persistence and degradability**

- No data available.

**Bioaccumulative potential**

- No data available

**Mobility in Soil**

- No data available

**Other adverse effects****Section 13 - Disposal Considerations****Waste treatment methods****Product waste**

- Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

**Packaging waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 14 - Transport Information**

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

**Special precautions for user**

- No data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

- No data available

**Section 15 - Regulatory Information****Safety, health and environmental regulations/legislation specific for the substance or mixture****SARA Hazard Classifications**

- No data available

Inventory				
Component	CAS	Canada DSL	EU EINECS	TSCA
Dorzolamide HCL	130693-82-2	No	No	No
Benzalkonium chloride	63449-41-2	Yes	Yes	Yes
Hydroxyethyl cellulose	9004-62-0	Yes	No	Yes
Mannitol	69-65-8	Yes	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes	Yes
Sodium Citrate	68-04-2	Yes	Yes	Yes
Water	7732-18-5	Yes	Yes	Yes

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

• Sodium Citrate	68-04-2	Uncontrolled product according to WHMIS classification criteria
• Mannitol	69-65-8	Uncontrolled product according to WHMIS classification criteria
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)
• Hydroxyethyl cellulose	9004-62-0	Uncontrolled product according to WHMIS classification criteria
• Water	7732-18-5	Uncontrolled product according to WHMIS classification criteria
• Dorzolamide HCL	130693-82-2	Not Listed

#### Canada - WHMIS - Ingredient Disclosure List

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	1 %
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

## Europe

### Other

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Xn; R21/22 C; R34 N; R50
• Sodium hydroxide	1310-73-2	C; R35



• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	5%<=C: C; R:35 2%<=C<5%: C; R:34 0.5%<=C<2%: Xi; R:36/38
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	C N R:21/22-34-50 S:(2)- 36/37/39-45-61
• Sodium hydroxide	1310-73-2	C R:35 S:(1/2)-26-37/39-45
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	S:(2)-36/37/39-45-61
• Sodium hydroxide	1310-73-2	S:(1/2)-26-37/39-45
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**United States****Environment****U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

• Sodium Citrate	68-04-2	Not Listed
• Mannitol	69-65-8	Not Listed
• Benzalkonium chloride	63449-41-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Hydroxyethyl cellulose	9004-62-0	Not Listed
• Water	7732-18-5	Not Listed
• Dorzolamide HCL	130693-82-2	Not Listed

**Section 16 - Other Information****Last Revision Date**

- 11/May/2015

**Preparation Date**

- 11/May/2015

**Disclaimer/Statement of Liability**

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