SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name: vision xr™ Dental Developer and Fixer, Developer

Product code: 1045541DEV

Supplier Benco Dental, 295 Centerpoint Boulevard, Pittston, PA 18640

CHEMTREC - 24-Hour Hazmat Emergency Communications Center
Domestic: 1-800-424-9300; Outside the U.S.: 1-703-527-3887, collect calls accepted

Phone: 1-800-GO-BENCO

Product Use: Photographic chemical.

2. HAZARDS IDENTIFICATION

Classification

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye Irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label Elements

<table>
<thead>
<tr>
<th>Signal Word</th>
<th>Emergency Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning</td>
<td></td>
</tr>
</tbody>
</table>

Hazard statements

- Causes serious eye irritation
- May cause an allergic skin reaction
- Suspected of causing genetic defects
- Suspected of causing cancer

Contains Hydroquinone

Appearance aqueous solution

Physical state liquid

Odor Odorless
Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace

Precautionary Statement - Response
IF exposed or concerned: Get medical advice/attention
Eyes
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
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

Precautionary Statement - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
* not applicable

Other information
Toxic to aquatic life. Contact with strong acids liberates sulfur dioxide. May cause respiratory irritation.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>80-90</td>
<td>*</td>
</tr>
<tr>
<td>Sodium sulfite</td>
<td>7757-83-7</td>
<td>1-5</td>
<td>*</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>123-31-9</td>
<td>&lt;2.5</td>
<td>*</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>144-55-8</td>
<td>1-5</td>
<td>*</td>
</tr>
<tr>
<td>Sodium borate</td>
<td>1330-43-4</td>
<td>0.1-1</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentages (concentrations) have been withheld as trade secrets.

### 4. FIRST AID MEASURES

First Aid Measures

**General advice**
If symptoms persist, call a physician.

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Skin contact**
Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.
Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion
If swallowed, call a poison control center or doctor immediately. Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
Main Symptoms
May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed
Notes to physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
No information available.

Hazardous Combustion Products
Carbon oxides.

Explosion Data
Sensitivity to Mechanical Impact
None.
Sensitivity to Static Discharge
None.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
For personal protection see section 8. Ensure adequate ventilation.

Environmental precautions

Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

7. HANDLING AND STORAGE
Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible products
Strong acids. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>AIHA - Workplace Environmental Exposure Levels (WEELs) - TWA</th>
<th>OSHA PEL</th>
<th>Advisory OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123-31-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium borate</td>
<td>STEL: 6 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1330-43-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>Ceiling: 2 mg/m³</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Measures
Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles.

Skin and body protection
Wear protective gloves/clothing.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures
When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Wash hands before breaks and at the end of workday. Wash hands with water as a precaution. Regular cleaning of equipment, work area and clothing is recommended. Avoid breathing vapors, mist or gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks/ Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>ph</td>
<td>10.1</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/range:</td>
<td></td>
<td>No information available</td>
</tr>
</tbody>
</table>
Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Contact with strong acids liberates sulfur dioxide.

Conditions to Avoid
Do not freeze.

Incompatible Materials
Strong acids. Oxidizing agents.

Hazardous Decomposition Products
Carbon oxides, Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation
No hazard from product as supplied. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.

Eye contact
Causes eye irritation.

Skin contact
May cause skin irritation and/or dermatitis.
Ingestion
May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Toxicology data for the components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rat)</th>
<th>LC50 Inhalation (Rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium sulfite 7757-83-7</td>
<td>820 mg/kg</td>
<td>&gt; 4800 mg/kg</td>
<td>22 mg/L 4 h</td>
</tr>
<tr>
<td>Hydroquinone 123-31-9</td>
<td>320 mg/kg</td>
<td>&gt;2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Sodium bicarbonate 144-55-8</td>
<td>4220 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium carbonate 584-08-7</td>
<td>1870 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium borate 1330-43-4</td>
<td>2403 mg/kg</td>
<td>2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Sodium bromide 7647-15-6</td>
<td>3400 mg/kg</td>
<td>&gt;2000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Chemical Name | Other applicable information
---|---
Sodium sulfite | No skin irritation
| Mild eye irritation
Hydroquinone | Moderate eye irritation
| Causes sensitization on guinea-pigs
| Mild skin irritation
| Can be absorbed through skin (1.1 ug/cm2/hr)
| Negative in bacterial mutagenicity assays. Evidence for mutagenicity (chromosome breakage, sister-chromatid exchanges) in in vivo and in vitro animal studies
| Hydroquinone has been classified as a Category 3 mutagen and carcinogen by the European Union based on testing of rats and mice given hydroquinone by stomach tube or at high dietary levels. The International Agency for Research on Cancer (IARC) under ranking for cancer potential has classified hydroquinone in Group 3, i.e. "not classifiable" as a carcinogen. In the European Union a Category 3 mutagen attracts the risk phrase R68 "Possible risk of irreversible effects" at concentrations above 1%, and a Category 3 carcinogen attracts the risk phrase R40 "Limited evidence of a carcinogenic effect" at concentrations above 1%. Exposure to products containing such substances should be controlled to below established control limits and special care should be taken with pregnant or breast-feeding women to ensure appropriate controls are in place to control the risk.
Sodium borate | Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects. However, the doses administered were many times those to which humans would normally be exposed.

Information on toxicological effects

Symptoms
Allergic skin reactions including rash, dermatitis, irritation, and itching.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
This mixture contains hydroquinone which is classified as a dermal sensitizer in some jurisdictions. A very similar mixture was negative in dermal sensitization studies with and without prior sensitization to hydroquinone. Based on the results of these studies, this mixture is not expected to present a dermal sensitization hazard to humans.

Mutagenic effects
No specific testing was done on this product. Mutagenic testing of the hazardous ingredient in this product has resulted in some positive mutagenic results.

Carcinogenicity
Contains a known or suspected carcinogen.
Hydroquinone  
123-31-9

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

<table>
<thead>
<tr>
<th>A3 - Animal Carcinogen</th>
</tr>
</thead>
</table>

**Reproductive toxicity**  
Contains ingredients that are suspected reproductive hazards. However, based on available data the product should not be classified for reproductive effects.

**STOT - single exposure**  
No information available.

**STOT - repeated exposure**  
No information available.

**Chronic toxicity**  
Effects expected to be similar to those seen acutely.

**Target Organ Effects**  
Skin, Eyes, Respiratory system.

**Aspiration Hazard**  
No information available.

### Numerical measures of toxicity - Product Information

#### Unknown Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document.

- **ATEmix (oral)**  
  5675 mg/kg

- **ATEmix (dermal)**  
  196078 mg/kg mg/L

### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Toxic to aquatic organisms.

0.639299999999995% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to microorganisms</th>
<th>Toxicty to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium sulfite 7757-83-7</td>
<td>LC50 220 - 460 mg/L</td>
<td>Leuciscus idus 96 h</td>
<td>LC50 = 330 mg/L 24 h (Psammechinus miliaris)</td>
<td></td>
</tr>
<tr>
<td>Hydroquinone 123-31-9</td>
<td>13.5 mg/L EC50 120 h (Desmodesmus subspicatus) 0.335 mg/L EC50 72 h (Pseudokirchneriella subcapitata)</td>
<td>LC50= 0.044 mg/L (Oncorhynchus mykiss 96 h LC50= 0.044 mg/L Pimephales promelas 96 h LC50 0.1 - 0.18 mg/L Pimephales promelas 96 h LC50= 0.17 mg/L Brachydanio rerio 96 h</td>
<td>EC50 = 0.29 mg/L 48 h (Daphnia magna)</td>
<td></td>
</tr>
<tr>
<td>Sodium bicarbonate 144-65-8</td>
<td>650 mg/L EC50 120 h (Nitzschia linearis)</td>
<td>LC50 8250 - 9000 mg/L Lepomis macrochirus 96 h</td>
<td>LC50 = 2350 mg/L 48 h (Daphnia magna)</td>
<td></td>
</tr>
<tr>
<td>Sodium borate 1330-43-4</td>
<td>158 mg/L EC50 96 h (Desmodesmus subspicatus) 2.6 - 21.8 mg/L EC50 96 h (Pseudokirchneriella subcapitata)</td>
<td>LC50= 340 mg/L Limanda limanda 96 h</td>
<td>LC50 1085 - 1402 mg/L 48 h (Daphnia magna)</td>
<td></td>
</tr>
<tr>
<td>Sodium carbonate 497-19-8</td>
<td>242 mg/L EC50 120 h (Nitzschia)</td>
<td>LC50= 300 mg/L Lepomis macrochirus 96 h LC50 310 - 1220 mg/L Pimephales promelas 96 h</td>
<td>EC50 = 265 mg/L 48 h (Daphnia magna)</td>
<td></td>
</tr>
<tr>
<td>Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt 140-01-2</td>
<td>2.6 mg/L EC50 72 h (Desmodesmus subspicatus)</td>
<td>LC50= 300 mg/L Pimephales promelas 96 h LC50 1005 - 1250 mg/L Lepomis macrochirus 96 h</td>
<td>EC50 &gt; 500 mg/L 48 h (Daphnia magna)</td>
<td></td>
</tr>
</tbody>
</table>
Potassium hydroxide
1310-58-3

LC50= 80 mg/L Gambusia affinis 96 h

**Bioaccumulation:**  
Not likely to bioaccumulate.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium sulfite</td>
<td>-4</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

**Waste Disposal Methods**  
Should not be released into the environment. Dispose of in accordance with local regulations.

**Contaminated packaging**  
Do not re-use empty containers. Dispose of in accordance with local regulations.

**14. TRANSPORT INFORMATION**

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

**DOT**  
Not regulated

**TDG**  
Not regulated

**ICAO/IATA**  
Not regulated

**IMDG/IMO**  
Not regulated

**15. REGULATORY INFORMATION**
International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL/NDSL</th>
<th>EINECS/ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
<th>NZIoC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances
- NZIoC - New Zealand Inventory of Chemicals

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone - 123-31-9</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute Health Hazard: Yes
- Chronic Health Hazard: Yes
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>HAPS data</th>
<th>VOC Chemicals</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone - 123-31-9</td>
<td></td>
<td>Group I</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>Extremely Hazardous Substances RQs</th>
<th>SARA Product RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>100 lb</td>
<td>100 lb</td>
<td></td>
</tr>
</tbody>
</table>

TSCA

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances</th>
</tr>
</thead>
</table>
U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sodium borate</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International Regulations

Mexico - Grade Moderate risk, Grade 2

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>A3</td>
<td>Mexico: TWA 2 mg/m³</td>
</tr>
<tr>
<td>Sodium borate</td>
<td></td>
<td>Mexico: TWA 1 mg/m³</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazard</th>
<th>Flammability</th>
<th>Instability</th>
<th>HMIS</th>
<th>Health Hazard</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
<td></td>
<td>2*</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Revision Date 2013-07-18

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Material Safety Data Sheet