Benzaldehyde
02590

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Benzaldehyde
Catalog Numbers: B/1400, B/1450
Synonyms: Benzenecarboxaldehyde, artificial almond oil, benzene carbaldehyde, benzoic aldehyde
Company Identification: Fisher Scientific UK
Bishop Meadow Road
Loughborough, Leicestershire
LE11 5RG, UK
For information, call: 01509 231166
For emergencies, call: 01509 231166

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

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<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
</tr>
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<tbody>
<tr>
<td>100-52-7</td>
<td>Benzaldehyde</td>
<td>100</td>
<td>202-860-4</td>
</tr>
</tbody>
</table>

Hazard Symbols: XN
Risk Phrases: 22

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Harmful if swallowed.

Potential Health Effects
Eye:
Causes eye irritation.
Skin:
Causes skin irritation.
Ingestion:
Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
Inhalation:
Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness
and coma. May cause respiratory tract irritation. May cause narcotic effects in high concentration.

Chronic:
Prolonged or repeated skin contact may cause dermatitis. May cause kidney injury.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:
Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water.

Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:
Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Get medical aid.

Notes to Physician:
Antidote:
None reported.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back.

Extinguishing Media:
Use water spray to cool fire-exposed containers. Use water spray, dry chemical, or foam. Use carbon dioxide.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Avoid runoff into storm sewers and ditches which lead to waterways. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust.

**** SECTION 7 - HANDLING and STORAGE ****
Handling:
Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:
Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents. Do not store near alkaline substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: yellow
Odor: bitter-almond
pH: 5.9
Vapor Pressure: 1 mm Hg @ 26.2C
Viscosity: Not available.
Boiling Point: 178 deg C
Freezing/Melting Point: -56 deg C
Autoignition Temperature: 192 deg C (377.60 deg F)
Flash Point: 64 deg C (147.20 deg F)
Explosion Limits, lower: 1.40%
Explosion Limits, upper: 8.5%
Decomposition Temperature: Not available.
Solubility in water: Slightly soluble.
Specific Gravity/Density: 1.0415 @10C
Molecular Formula: C6H5CHO
Molecular Weight: 106.0414

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable.
Conditions to Avoid:
High temperatures, incompatible materials, ignition sources.
Incompatibilities with Other Materials:
Incompatible with strong oxidizing agents. Oxidizes in air to benzoic acid. Reacts dangerously with performic acid.
Hazardous Decomposition Products:
Carbon monoxide, irritating and toxic gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
    CAS# 100-52-7: CU4375000
LD50/LC50:
    CAS# 100-52-7: Draize test, rabbit, skin: 500 mg/24H Moderate;
Oral,
    mouse: LD50 = 28 mg/kg; Oral, rat: LD50 = 1300 mg/kg.
Carcinogenicity:
Benzaldehyde -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Other:
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Fish: Rainbow trout: LC50 =11 mg/L; 96 Hr.; UnspecifiedFish:
Bluegill/Sunfish: LC50 =1.1-7.6 mg/L; 96 Hr.; UnspecifiedWater flea
LC50 =5.0 mg/L; 24 Hr.; UnspecifiedBacteria: Phytobacterium
phosphateum: EC50 =4.85 - 6.11 mg/L; 5, 15, 30 Minutes; Microtox
Test, 15 degrees C

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA
Shipping Name: BENZALDEHYDE
Hazard Class: 9
UN Number: 1990
Packing Group: III
IMO
Shipping Name: BENZALDEHYDE
Hazard Class: 9
UN Number: 1990
Packing Group: III
RID/ADR
Shipping Name: BENZALDEHYDE
Dangerous Goods Code: 9(32C)
UN Number: 1990

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
   R 22 Harmful if swallowed.
Safety Phrases:
   S 24 Avoid contact with skin.
WGK (Water Danger/Protection)
CAS# 100-52-7: 2
United Kingdom Occupational Exposure Limits
Canada
   CAS# 100-52-7 is listed on Canada's DSL List.
   CAS# 100-52-7 is listed on Canada's Ingredient Disclosure List.
Exposure Limits
   CAS# 100-52-7: OEL-HUNGARY:TWA 5 mg/m3; STEL 10 mg/m3
   OEL-RUSSIA: STEL 5 mg/m3
US FEDERAL
TSCA
   CAS# 100-52-7 is listed on the TSCA inventory.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 5/03/1999 Revision #1 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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