

# Material Safety Data for: Benzyl Alcohol

## 1. PRODUCT IDENTIFICATION

|                               |   |
|-------------------------------|---|
| <b>Product Name</b>           | benzyl alcohol  |
| <b>Synonyms</b>               | benzoyl alcohol, phenylmethyl alcohol, alpha-hydroxytoluene, & others               |
| <b>CAS #</b>                  | 100-51-6  |
| <b>Europe ELINCS/EINECS #</b> | 202-859-9   |
| <b>Material Use</b>           | textile dyeing, solvent, chemical synthesis, flavourings, perfumes, cosmetics, etc. |

## 2. INGREDIENTS

|                | %    | TWAEV / TLV<br>mg/m <sup>3</sup> | LD <sub>50</sub><br>ORAL | (mg/kg)<br>SKIN | LC <sub>50</sub> ppm<br>INHALATION |
|----------------|------|----------------------------------|--------------------------|-----------------|------------------------------------|
| Benzyl Alcohol | 100% | not listed                       | 1040                     | 2000            | above 114                          |

## 3. (a) HAZARDS SUMMARY

**Hazards, Quick Guide:** combustible liquid, heavy vapour can travel, distant ignition and flashback are possible, eye irritant

### Canada – WHMIS

Key:

**B 2, D 2B** (eye irritation)

**B 2** – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

**D 1** – Immediately Toxic, **D 2** – Chronic Toxicity

**C** – Oxidising Substance, **E** – Corrosive

### U.S.A. – HMIS

Key:

**Health – 1, Fire – 1, Reactivity – 1**

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

## 3. (b) HAZARDS – TOXICITY

### Effects, Acute Exposure

|                 |   |
|-----------------|---|
| Skin Contact    | mild irritant; <i>local anaesthetic action may help mask irritation</i>                                 |
| Skin Absorption | slight; toxic effects unlikely by this route  |
| Eye Contact     | severely irritating, appears not to damage eyes   |
| Inhalation      | irritation; headache, dizziness, drowsiness, intoxication – <i>little vapour at ambient temperature</i> |
| Ingestion       | likely to cause headache, dizziness, drowsiness, intoxication & vomiting                                |

### Effects, Chronic Exposure

|                               |  |
|-------------------------------|--|
| General                       | prolonged or repeated exposure may cause dermatitis; may damage liver and kidneys            |
| Sensitising                   | not a sensitiser   |
| Carcinogen/Tumorigen          | not known to be a tumorigen or a carcinogen in humans or animals                             |
| Reproductive Effect           | no known effect on humans or animals not also causing maternal toxicity                      |
| Mutagen                       | not known to be a mutagen or teratogen in humans or animals                                  |
| Synergistic With              | aromatic hydrocarbons and chlorinated hydrocarbons   |
| LD <sub>50</sub> (oral)       | 1230 & 1660mg/kg (rat), 1360 & 1580mg/kg (mouse), 1040mg/kg (rabbit), 2500mg/kg (guinea pig) |
| LD <sub>50</sub> (skin)       | 2000mg/kg (rabbit), 5250mg/kg (guinea pig)   |
| LC <sub>50</sub> (inhalation) | above 114ppm (rat)   |

**NOTE:** LD<sub>50</sub> & LC<sub>50</sub> test data vary widely between species and even between independent tests on the same species. The data's relevance to human toxicity cannot be assumed.

**Please ensure that this MSDS is given to, and explained to people using this product.**

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**4. FIRST AID**

- SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.
- EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
- INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If breathing stops, administer artificial respiration and seek medical aid promptly.
- INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

*Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.*

**5. PHYSICAL PROPERTIES**

|   |   |
|---|---|
| Odour & Appearance                            | clear, colourless liquid with mild, pleasant "mothball" odour       |
| Odour Threshold                               | 5.5ppm  |
| Vapour Pressure                               | 0.15mmHg / 0.02kPa (25°C/ 77°F)                                     |
| Evaporation Rate ( <i>Butyl Acetate = 1</i> ) | ~0.01   |
| Vapour Density (air = 1)                      | 3.7   |
| Boiling Point                                 | 206°C / 403°F   |
| Freezing Point                                | -15°C / 5°F   |
| Specific Gravity                              | 1.045 (20/20°C)   |
| Water Solubility                              | 35 grams per litre  |
| - in other solvents                           | most organic solvents; limited solubility in aliphatic hydrocarbons |
| Viscosity                                     | 5.8centipoise (20°C)  |
| pH  | none – <i>does not yield hydrogen ions in solution</i>              |
| Conversion Factor                             | 1ppm = 4.41mg/m <sup>3</sup>  |
| Molecular Weight                              | 108   |

**6. FLAMMABILITY & FIRE FIGHTING**

|                           |   |
|---------------------------|---|
| Flash Point               | 93°C / 200°F (closed cup)   |
| Autoignition Temperature  | 436°C / 817°F   |
| Flammable Limits          | 1.3% – 13%  |
| Combustion Products       | carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments  |
| Fire Fighting Precautions | foam, dry chemical, water fog, water spray only to cool & dilute,<br>water jet spreads flames; fire fighters must wear SCBA |
| Static Discharge          | may accumulate a static charge, but high flash point makes ignition unlikely  |

**7. STABILITY / REACTIVITY**

|                           |   |
|---------------------------|---|
| Dangerously Reactive With | strong oxidising agents   |
| Also Reactive With        | corrodes iron, steel & aluminium when heated ( <i>actual temperature for this action not given</i> )            |
| Chemical Stability        | stable; will not polymerise – <i>may polymerise explosively above 100°C in presence of both acid &amp; iron</i> |
| Decomposes in Presence of | ~50% sulphuric acid at about 180°C – reaction may be violent  |
| Decomposition Products    | gradual decomposition to benzoic acid & benzaldehyde  |
| Mechanical Impact         | not sensitive   |

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## 8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

|             |   |
|-------------|---|
| ACGIH TLV   | not listed – ACGIH WEEL 10ppm / 41mg/m <sup>3</sup>   |
| OSHA PEL    | not listed  |
| STEL        | not listed  |
| Ventilation | depending on handling, mechanical ventilation may be required to control airborne titre (above) |
| Hands       | “Viton” gloves may be worn – <i>confirm suitability with supplier</i>                           |
| Eyes        | safety glasses with side shields – <i>always protect eyes!</i>                                  |
| Clothing    | no special protective clothing required   |

## 9. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition, heat, acids, and oxidising agents. Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use. *Replace drum, pail or IBC cap prior to moving the container!*

Avoid breathing product vapour or mist. Use with adequate ventilation.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

## 10. SPILL PROCEDURES

|                 |   |
|-----------------|---|
| Leak Precaution | dyke to control spillage and prevent environmental contamination  |
| Handling Spill  | ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on sand or vermiculite; sweep, shovel, & store in closed containers for disposal |

## 11. DISPOSAL

|                |  |
|----------------|--|
| Waste Disposal | <b>do not flush to sewer</b> ; recycle if possible; incinerate in approved facility with flue gas monitoring & scrubbing   |
| Containers     | <b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.<br><b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling.<br><b>IBCs</b> (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years.<br><i>Never cut, drill, weld or grind on or near this container, even if empty</i> |

## 12. ENVIRONMENTAL INFORMATION

|                                 |   |
|---------------------------------|---|
| Bioaccumulation                 | this product is readily metabolised and will not bioaccumulate; half life in mammals is ~90 minutes                                     |
| Biodegradation                  | this product degrades readily and rapidly in the presence of oxygen; 70% in 5 days<br>anaerobic degradation is 100% complete in 2 weeks |
| Abiotic Degradation             | this product reacts with atmospheric hydroxyl (OH) radicals; estimated half-life in air is 17 hours                                     |
| Mobility in soil, water         | this product is water soluble and moves readily through soil and the water column   |
| <b>Marine Toxicity</b>          |   |
| LC <sub>50</sub> (Fish)         | 646mg/litre (leuciscus idus, 48hr), 10mg/litre (lepomis macrochirus, 96hr), 15mg/litre (menidia beryllina, 96hr)                        |
| LC <sub>50</sub> (Crustacea)    | 55 & 400mg/litre (daphnia magna, 24hr)  |
| EC <sub>50</sub> (Algæ)         | 90mg/litre (anabaena cylindrica, 3hr), 2600mg/litre (hematococcus pluvialis, 4hr)   |
| LC <sub>50</sub> microorganisms | 71mg/litre (photobacterium phosphoreum, 30min)  |

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### 13. TRANSPORT REGULATIONS

|                         |                      |                                    |
|-------------------------|----------------------|------------------------------------|
| <i>Canada TDG</i>       | <b>PIN</b>           | <b>not regulated for transport</b> |
| <b>AND</b>              | <b>Shipping Name</b> | <b>not regulated for transport</b> |
| <i>U.S.A. 49 CFR</i>    | <b>Class</b>         | <b>not regulated for transport</b> |
|                         | <b>Packing Group</b> | <b>not regulated for transport</b> |
| <b>Marine Pollutant</b> |                      | <b>not a marine pollutant</b>      |

### 14. EMERGENCY INFORMATION

|               |                               |                       |
|---------------|-------------------------------|-----------------------|
| <i>Canada</i> | <b>Call CANUTEC (collect)</b> | <b>(613) 996-6666</b> |
| <i>U.S.A.</i> | <b>Call CHEMTREC</b>          | <b>(800) 424-9300</b> |

### 15. REGULATIONS

|                      |                                     |
|----------------------|-------------------------------------|
| <b>Canada DSL</b>    | <b>on inventory</b>                 |
| <b>U.S.A. TSCA</b>   | <b>on inventory</b>                 |
| <b>Europe EINECS</b> | <b>on inventory (EC# 202-859-9)</b> |

**Atmospheric Standards:** This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non-air quality health and environmental impact and energy requirements. Benzyl alcohol is produced, as an intermediate or final product, by process units covered under this subpart.

**State Drinking Water Guidelines:** Florida 2,100 ug/l

**FDA Requirements:** Benzyl alcohol is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) when intended for use in or on food it is of appropriate food grade and is prepared and handled as a food ingredient. Benzyl alcohol is an indirect food additive for use only as a component of adhesives. Benzyl alcohol is an indirect food additive for use as a component of resinous and polymeric coatings. Diluents in color additive mixtures for externally applied drug use exempt from certification.

### 16. PREPARATION INFORMATION

*Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577*

**File Name: benz-alcohol**

*With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCLID Datasheets (European Chem. Substance Info. System), & others, as available*

*Preparation Date: November 2003 Revision Date: August 2006, August 2009*

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