

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2  
Creation Date: July 15, 2019  
Revision Date: August 08, 2025

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Benzyl Alcohol EP Impurity A

### 1.2 Other means of identification

Product number C4X-11803  
Other names Glycopyrronium Bromide EP Impurity F

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.  
Uses advised against no data available

### 1.4 Supplier's details

Company CATO Research Chemicals Inc.  
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou  
Telephone +86-20-81960175

### 1.5 Emergency phone number

Emergency phone number +86-20-81960175  
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning  
Hazard statement(s) H302 Harmful if swallowed

Precautionary statement(s)

Prevention P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
Response P301+P317 IF SWALLOWED: Get medical help.  
P330 Rinse mouth.

Storage none  
Disposal P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name                | Common names and synonyms | CAS number | EC number | Concentration |
|------------------------------|---------------------------|------------|-----------|---------------|
| Benzyl Alcohol EP Impurity A | Benzaldehyde              | 100-52-7   | 202-860-4 | 100%          |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

**If inhaled**

Fresh air, rest.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower.

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Rest.

## **4.2 Most important symptoms/effects, acute and delayed**

Inhalation of concentrated vapor may irritate eyes, nose and throat. Liquid is irritating to the eyes. Prolonged contact with the skin may cause irritation. (USCG, 1999)

## **4.3 Indication of immediate medical attention and special treatment needed, if necessary**

Immediate First Aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention.

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Specific hazards arising from the chemical**

Excerpt from ERG Guide 129 [Flammable Liquids (Water-Miscible / Noxious)]: **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

### **5.3 Special protective actions for fire-fighters**

Use water spray, foam, powder, carbon dioxide.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.2 Environmental precautions**

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.3 Methods and materials for containment and cleaning up**

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

NO open flames. Above 63°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **7.2 Conditions for safe storage, including any incompatibilities**

Separated from incompatible materials. See Chemical Dangers. Well closed. Ventilation along the floor. Cool. Store in an area without drain or sewer access. Keep in the dark. Store under nitrogen. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Air, light, and moisture sensitive.

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## **SECTION 8: Exposure controls/personal protection**

## 8.1 Control parameters

### Occupational Exposure limit values

| Component        | Benzaldehyde              |                   |                          |                   |
|------------------|---------------------------|-------------------|--------------------------|-------------------|
| CAS No.          | 100-52-7                  |                   |                          |                   |
|                  | Limit value - Eight hours |                   | Limit value - Short term |                   |
|                  | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Canada - Ontario |                           |                   | 4                        | 17                |
| Finland          | 1                         | 4,4               | 4 (1)                    | 17,4 (1)          |
| Hungary          |                           | 5                 |                          | 10                |
| Latvia           |                           | 5                 |                          |                   |
| Poland           |                           | 10                |                          | 40                |
|                  | Remarks                   |                   |                          |                   |
| Finland          | (1) Ceiling limit value   |                   |                          |                   |

### Biological limit values

no data available

## 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## 8.3 Individual protection measures, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety spectacles or face shield.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use ventilation, local exhaust or breathing protection.

### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

|                                                          |                                                                        |
|----------------------------------------------------------|------------------------------------------------------------------------|
| Physical state                                           | Liquid.                                                                |
| Colour                                                   | Colourless, becoming yellowish on keeping.                             |
| Odour                                                    | Characteristic odor or volatile oil of almond                          |
| Melting point/freezing point                             | -26 °C.                                                                |
| Boiling point or initial boiling point and boiling range | 179 °C. Atm. press.:Unknown. Remarks:Atmospheric pressure unknown.     |
| Flammability                                             | Combustible. Gives off irritating or toxic fumes (or gases) in a fire. |
| Lower and upper explosion limit/flammability limit       | Lower: 1.4% by vol                                                     |
| Flash point                                              | 62 °C.                                                                 |
| Auto-ignition temperature                                | 192 °C. Remarks:Pressure unknown.                                      |
| Decomposition temperature                                | no data available                                                      |
| pH                                                       | no data available                                                      |
| Kinematic viscosity                                      | dynamic viscosity (in mPa s) = 1.321. Temperature:25.0°C.              |
| Solubility                                               | less than 0.1 mg/mL at 67.1° F (NTP, 1992)                             |
| Partition coefficient n-octanol/water                    | log Pow = 1.4. Temperature:25 °C. Remarks:PH unknown.                  |
| Vapour pressure                                          | 169 Pa. Temperature:25 °C.                                             |
| Density and/or relative density                          | 1.05. Temperature:15 °C.;1.043. Temperature:25 °C.                     |
| Relative vapour density                                  | 3.7 (vs air)                                                           |
| Particle characteristics                                 | no data available                                                      |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The substance can form explosive peroxides under special conditions. Reacts violently with aluminium, bases, iron, oxidants and phenol. This generates fire and explosion hazard.

## 10.2 Chemical stability

Stable under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

Combustible liquid. A nontoxic, combustible liquid, reacts with oxidizing reagents. BENZALDEHYDE must be blanketed with an inert gas at all times since it is oxidized readily by air to benzoic acid [Kirk-Othmer, 3rd ed., Vol. 3, 1978, p. 736]. In contact with strong acids or bases it will undergo an exothermic condensation reaction [Sax, 9th ed., 1996, p. 327]. A violent reaction was observed on contact with peroxyacids (peroxyformic acid) [D'Ans, J. et al., Ber., 1915, 48, p. 1136]. An explosion occurred when pyrrolidine, benzaldehyde, and propionic acid were heated to form porphyrins.

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

Incompatible materials: Strong oxidizing agents, strong reducing agents, strong bases, alkali metals, aluminum, iron, phenols, oxygen.

## 10.6 Hazardous decomposition products

Combustion may produce irritants and toxic gases.

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# SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat (male) - ca. 1 430 mg/kg bw.
- Inhalation: LC50 - rat (male/female) - 1 - 5 mg/L air.
- Dermal: LD50 - rabbit (male/female) - > 2 000 mg/kg bw.

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes.

### STOT-repeated exposure

no data available

### Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

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# SECTION 12: Ecological information

## 12.1 Toxicity

- Toxicity to fish: LC50 - Pimephales promelas - 12.4 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 50 mg/L - 24 h.
- Toxicity to algae: TTSc - Scenedesmus quadricauda - 34 mg/L - 7 d.
- Toxicity to microorganisms: IC50 - activated sludge - 740 mg/L - 3 h. Remarks: O2.

## 12.2 Persistence and degradability

AEROBIC: Benzaldehyde had a 5 day theoretical BOD of 36% using the AFNOR T test and inoculum from 3 polluted surface waters(1). Using a sewage inocula and standard dilution water, benzaldehyde had a 10-day theoretical BOD of 62%(2). Theoretical BODs of 41-70% were observed (at 500 ppm concentration) in Warburg respirometers using 3 different activated sludge seeds and 6 days of incubation(3). Theoretical BOD of 13% was observed (at 500 ppm concentration) in a Warburg respirometer using a digester sludge seed acclimated to benzene and 6 hr incubation(4). Theoretical BODs of 30-38% were observed (at 250 ppm concentration) in Warburg respirometers using activated sludge seeds acclimated to phenol, benzyl alcohol or anthranilic acid and 12 hr incubation(5). About 99% of initial benzaldehyde was removed (based upon COD) in 5 days of incubation using an activated sludge inocula that had been acclimated to benzaldehyde for 20 days(6). Five-day theoretical BODs of 77.2% and 63.5% were measured using the standard dilution method and seawater dilution method, respectively(7). Benzaldehyde, present at 100 mg/L, reached 66% of its theoretical BOD in 2 weeks using an activated sludge inoculum at

30 mg/L and the Japanese MITI test which classified the compound as readily biodegradable(8).

### 12.3 Bioaccumulative potential

An estimated BCF of 4.4 was calculated in fish for benzaldehyde(SRC), using a log Kow of 1.48(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of benzaldehyde can be estimated to be 11(SRC). According to a classification scheme(2), this estimated Koc value suggests that benzaldehyde is expected to have very high mobility in soil.

### 12.5 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN1990 (For reference only, please check.) IMDG: UN1990 (For reference only, please check.) IATA: UN1990 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: BENZALDEHYDE (For reference only, please check.) IMDG: BENZALDEHYDE (For reference only, please check.) IATA: BENZALDEHYDE (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.) IMDG: 9 (For reference only, please check.) IATA: 9 (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.) IMDG: III (For reference only, please check.) IATA: III (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name                                                            | Common names and synonyms | CAS number | EC number   |
|--------------------------------------------------------------------------|---------------------------|------------|-------------|
| Benzaldehyde                                                             | Benzaldehyde              | 100-52-7   | 202-860-4   |
| European Inventory of Existing Commercial Chemical Substances (EINECS)   |                           |            | Listed.     |
| EC Inventory                                                             |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory              |                           |            | Listed.     |
| China Catalog of Hazardous chemicals 2015                                |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                               |                           |            | Listed.     |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       |                           |            | Listed.     |
| Vietnam National Chemical Inventory                                      |                           |            | Listed.     |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) |                           |            | Listed.     |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Listed.     |

## SECTION 16: Other information

### Information on revision

|               |                 |
|---------------|-----------------|
| Creation Date | July 15, 2019   |
| Revision Date | August 08, 2025 |

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

Rinse contaminated clothing with plenty of water because of fire hazard. Check for peroxides prior to distillation; eliminate if found.

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

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