

Global Product Strategy (GPS) Safety Summary

Isopropyl alcohol

This GPS Safety Summary is a high-level summary intended to provide the general public with an overview of product safety information on this chemical substance. It is not intended to provide emergency response, medical or treatment information, nor to provide an overview of all safety and health information. This summary is not intended to replace the Safety Data Sheet. For detailed guidance on the use or regulatory status of this substance, please consult the Safety Data Sheet and the Product Stewardship Bulletin (PSB).

Chemical Identity

Name: Isopropyl alcohol

Brand names: Isopropyl alcohol, Isopropanol

Chemical name (IUPAC): 2-Propanol

CAS number: 67-63-0

EC number: 200-661-7

Molecular formula: C₃H₈O

Uses and Applications

Isopropyl alcohol is an excellent, low-cost solvent, displaying a balance between alcohol, water and hydrocarbon characteristics. It evaporates quickly and leaves nearly no residue, making it ideal for cleaning electronic devices, magnetic tape, optical fibers and computer screens.

Manufacturers of consumer products use isopropyl alcohol in preparing cements, varnishes, paints, printing inks and many other products.

It is also used industrially as an intermediate to manufacture other chemicals such as isopropyl acetate and acetone.

The USP grade may be used in pharmaceutical and personal care applications.

Physical / Chemical Properties

At ambient temperature isopropyl alcohol is a colorless liquid with a medicinal odor that is detectable at approximately 200 parts per million of air (ppm). The substance is of low molecular weight and is considered to be highly flammable. The flash point for isopropyl alcohol is 12°C (54°F). The boiling and freezing points of Isopropyl alcohol are 82°C (180°F) and -88°C (-126°F) respectively.

Isopropyl alcohol has been classified as hazardous under GHS (Globally Harmonized System on Classification and Labeling) for its high flammability.

Health Effects

Isopropyl alcohol has been classified under GHS as hazardous for eye irritation and single exposure narcotic effects.

The table below gives an overview of the health effects assessment results for isopropyl alcohol.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Low concern for acute toxicity. High exposures may cause local irritation at site of contact and absorption may lead to central nervous system effects (headache, dizziness, sleepiness, coma and death), visceral organ damage, and death with severe over-exposure. Aspiration into the lungs can cause fatal chemical pneumonitis.
Irritation / corrosion Skin / eye/ respiratory tract	Liquid may cause slight skin irritation and cause serious eye irritation. Exposure of liquid to the underdeveloped skin of premature infants may cause severe irritation. High vapor concentrations may cause irritation of the eyes, nose, and/or throat.
Sensitization	Not a sensitizer
Toxicity after repeated exposure Oral / inhalation / dermal	Low concern for repeated exposure systemic toxicity. Repeated contact with concentrated product may dry the skin causing cracking and/or fissuring.
Genotoxicity / Mutagenicity	Not mutagenic/genotoxic.
Carcinogenicity	Not considered to be a human cancer concern.
Toxicity for reproduction	No adverse effects on fertility and not selectively toxic to the embryo/fetus.

Environmental Effects

Isopropyl alcohol has very low toxicity to aquatic life and has accordingly not been classified under GHS as hazardous.

The table below gives an overview of the environmental assessment results for isopropyl alcohol.

Effect Assessment	Result
Aquatic Toxicity	Very low toxicity to aquatic life

Fate and behaviour	Result
Biodegradation	Rapidly biodegradable
Bioaccumulation potential	Not expected to bioaccumulate
PBT / vPvB conclusion	Not considered to be either PBT nor vPvB.

PBT = Persistent, Bio-accumulative and Toxic in the environment.

vPvB = very Persistent and very Bio-accumulative in the environment.

Exposure

Human health

When using an isopropyl alcohol containing consumer product at home, all instructions and precautions should be read, understood and followed. Adequate ventilation should be provided and it should never be used near open flames or other ignition sources.

Workers may be exposed to isopropyl alcohol during activities such as product transfer, packing and repacking, formulation, laboratory activities, or during use as a component in professional or industrial products. For such activities, exposure should be controlled by selecting and applying the appropriate Risk Management Measures.

Exposure to isopropyl alcohol in manufacturing facilities where isopropyl alcohol is used as a chemical intermediate is considered low because the process, storage and handling operations are usually enclosed. However, worker exposure can potentially occur during operations such as product transfer, product sampling, or maintenance / repair activities on product containing systems. The risk of accidental exposure should be controlled by selecting and applying the appropriate Risk Management Measures.

Environment

Isopropyl alcohol is manufactured in a closed and automated process. Transfer (loading and transport) of isopropyl alcohol is conducted with dedicated equipment in dedicated containers to prevent any release from the system.

Risk Management Measures

For detailed guidance on the use of isopropyl alcohol, the Safety Data Sheet and the Product Safety Bulletin should be consulted.

Isopropyl alcohol should be handled only by knowledgeable and trained personnel.

Flammability

Because of its flammability, isopropyl alcohol should not be handled or stored near heat, sparks or flame. Metal containers involved in the handling and storage of this material should be grounded and bonded.

Human health

When using chemicals make sure that there is adequate ventilation. Always use appropriate chemical-resistant gloves to protect your hands and skin, always wear eye protection such as chemical goggles and always wear flame-retardant clothing. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. Wash hands and skin following contact. If the substance gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention.

In the case of transfer or maintenance operations, always clear transfer lines prior to decoupling, and flush/drain to a closed system for recycle prior to opening equipment.

In cases where engineering controls cannot maintain airborne substance concentrations below exposure limits, or in cases with a risk of accidental exposure, additional risk management measures may be necessary for safe use, such as the use of a complete suit protecting against chemicals and supplied air, a self-contained breathing apparatus or respirator.

Environmental

In case of accidental release or spill, do not allow the product to enter sewers, surface or ground water.

Regulatory Information / Classification and Labeling

For a detailed overview of the regulatory status of this substance, please refer to the Product Stewardship Bulletin which is available from the LyondellBasell corporate website.

Under GHS (Globally Harmonized System on Classification and Labeling) substances are classified according to their physical, health and environmental hazards. The hazards are communicated via specific labels on the product packaging and the Safety Data Sheet. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

For a detailed overview of the classification and labeling of this substance, please refer to the regional Safety Data Sheet, which can be found on the LyondellBasell corporate website.

Conclusion Statements

- Isopropyl alcohol is used as a solvent, and to produce components of many consumer products including varnishes, paints, inks and many other products.
- Isopropyl alcohol USP is used in pharmaceutical and personal care applications.
- Isopropyl alcohol has been classified as hazardous. The main hazards are high flammability, severe eye irritation, and gastrointestinal and central nervous system effects at high concentrations.
- Exposure to human health and environment is considered very low as the Isopropyl alcohol manufacturing process, storage and handling operations are enclosed.

Contact Information within Company

For further information on this product in general, please consult the LyondellBasell corporate website.

Date of issue

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Disclaimer

Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally. SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.

LyondellBasell prohibits or restricts the use of its products in certain applications. For further information on restrictions or prohibitions of use, please contact a LyondellBasell representative.

Users should review the applicable Safety Data Sheet before handling the product.

Isopropyl alcohol is a product of Lyondell Chemical Company