



## Material Safety Data Sheet

### Isopropanol MSDS

#### Section 1: Chemical Product and Company Identification

**Product Name:** Isopropanol

**CAS#:** 67-63-0

**Synonym:** 2-Propanol

**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>O

**Contact Information for Emergency:** +40 785 276 492 / +40 744 895 932

AGP VECTORIAL ROMANIA

office@agpvectorial.ro

www.agpvectorial.ro

phone: +40 785 276 492

+40 744 895 932

#### Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	%By Weight
Isopropanol	67-63-0	99.9
Water	7732-18-5	0.1%

#### Section 3: Hazards Identification

The substance is classified as following according to 67/548/EEC and regulation (EC) No 1272/2008:

##### Regulation (EC) No 1272/2008

Hazardous classes/Hazardous categories	Hazard statement
Flam. Liq. 2	H225
Eye Irrit. 2	H319
STOT SE 3	H336

For full text of H-phrases: see section 2.2.

**67/548/EEC**

Hazardous characteristics

F  
Xi  
-

R-Phrases

R11  
R36  
R67

**Label Elements**

**Hazardous pictograms:**



**Signal word(s)**

Danger

**Hazardous statement**

H225: Highly flammable liquid and vapour  
H319: Causes serious eye irritation  
H336: May cause drowsiness or dizziness.

**Precautionary statement:**

P210: Keep away from heat/sparks/open flames/hot surfaces. - No Smoking.  
P233: Keep container tightly closed.  
P240: Ground/bond container receiving equipment.  
P241: Use explosion-proof electrical/ventilating//lightening equipment.  
P242: Use only non-sparking tools  
P243: Take precautionary measures against static discharge  
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264: Wash hands thoroughly after handling.  
P271: Use only outdoors or in a well-ventilated area.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.  
P304+P340: IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.Remove contact lenses, if present and easy to do. Continue rinsing.  
P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
P337+P313: IF eye irritation persists: Get medical advice/attention.  
P370+P378: In case of fire: Use Water spray, alcohol-resistant foam, carbon dioxide, dry powder for extinction.  
P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P403+P233: Store in a well-ventilated place. Keep cool.  
P405: Store locked up.  
P501: Dispose of contents/container in accordance with local regulation

#### Other Hazardous

No Applicable

### Section 4: First Aid Measures

In all cases of doubt, or when symptoms persist, seek medical attention.

#### In case of inhalation

Move to fresh air

#### In case of skin contacts

Wash off with plenty of water

#### In case of eye contacts

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

#### In case of ingestion

Drink plenty of water. Do NOT induce vomiting. Obtain medical attention.

#### Most important symptoms and effect, both acute and delayed:

Cause serious eye irritation. May cause drowsiness or dizziness.

#### Indication of any immediate medical attention and special treatment needed:

Not Available.

### Section 5: Fire and Explosion Data

#### Extinguishing media:

Suitable extinguishing media: Water spray, alcohol-resistant foam, carbon dioxide, dry powder

**Unsuitable extinguishing media:** high volume water.

**Special hazards arising from the substance or mixture:** Highly flammable or liquid and vapour. In case of fire, the following can be released: Carbon oxide.

**Special fire-fighting methods and special protective actions for fire-fighters:** Fire-fighter must wear fire resistant protective equipment. Wear approved respirator and protective gloves. Use water spray to cool unopened containers.

### Section 6: Accidental Release Measures

#### Personal precautions, protective equipment and emergency procedures:

**For non-emergency personnel:** Ensure adequate ventilation. Keep away sources of ignition - No smoking.

**For emergency responders:** Wear an appropriate NIOSH/MSHA approved respirator if vapour is generated.

**Environmental precautions:** Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

**Methods for containment and cleaning up:** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, saw dust).

**Reference to other sections:** See section 7 for information on safe handling.

See section 8 for information on personal protection equipment

See section 8 for information on disposal

**Additional information:** Not applicable

### Section 7: Handling and Storage

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**Precautions for safe handling:****Protective measures:**

Ensure adequate ventilation. Vapour is heavier than air and may spread along floors. Keep away from sources of ignition - No smoking. Vapour may form explosive mixtures with air. Do not allow to enter drains(danger of explosion). Take precautionary measures against static discharges.

Advise on general occupational hygiene: Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store between 5 and 25°C in a dry and well ventilated place away from sources of heat, ignition, and direct sunlight.

Specific end use(s): Not applicable

**Section 8: Exposure Controls/Personal Protection****Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:**

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**

TWA: 983 STEL: 1230 (mg/m<sup>3</sup>) [Australia] TWA: 200 STEL: 400 (ppm) from ACGIH (TLV) [United States] [1999]  
TWA: 980

STEL: 1225 (mg/m<sup>3</sup>) from NIOSH TWA: 400 STEL: 500 (ppm) from NIOSH TWA: 400 STEL: 500 (ppm) [United Kingdom

(UK)] TWA: 999 STEL: 1259 (mg/m<sup>3</sup>) [United Kingdom (UK)] TWA: 400 STEL: 500 (ppm) from OSHA (PEL) [United States]

TWA: 980 STEL: 1225 (mg/m<sup>3</sup>) from OSHA (PEL) [United States]Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Molecular formula:** C<sub>3</sub>H<sub>8</sub>O

**Physical state and appearance:** Liquid.

**Odor:** Not available.

**Taste:** Bitter. (Slight.)

**Molecular Weight:** 60.1 g/mole

**Color:** Colorless.

**pH (1% soln/water):** Not available.

**Boiling Point:** 80.3°C

**Melting Point:** -88.5°C (-127.3°F)

**Flash point:** 12°C

**Evaporation rate:** Not available.

**Ignition point:** 399°C

**Upper/lower flammability/explosive limits:** 12.7/2.0

**Specific Gravity:** 0.78505 (Water = 1)

**Vapor Pressure:** 4.4 kPa (@ 20°C)

**Vapor Density:** 2.07 (Air = 1)

**Relative Density:** 0.79

**Water solubility:** Soluble in water

**Volatility:** Not available.

O-Octanol/Water(Log/po/w) <0.28

**Dispersion Properties:** See solubility in water, methanol, diethyl ether, n-octanol, acetone.

**Solubility:**

Easily soluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone. Insoluble in salt solution. Soluble in benzene. Miscible with most organic solvents including alcohol, ethyl alcohol, chloroform.

## Section 10: Stability and Reactivity Data

**Reactivity:** The substance is stable under normal storage and handling conditions.

**Chemical stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Possibility of hazardous reactions:** Vapours may form explosive mixture with air.

**Conditions to avoid:** Incompatible materials.

**Incompatible materials:** Strongly oxidizing agents.

**Hazardous decomposition products:** Carbon oxides.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:

**WARNING:** THE LC<sub>50</sub> VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.

**Acute oral toxicity (LD<sub>50</sub>):** 3600 mg/kg [Mouse]. Acute dermal toxicity (LD<sub>50</sub>): 12800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC<sub>50</sub>): 16000 8 hours [Rat].

Chronic Effects on Humans:

**CARCINOGENIC EFFECTS:** A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by

**IARC. DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/female, Development toxin [POSSIBLE]. May cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS).

Other Toxic Effects on Humans:

Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer, permeator).

Special Remarks on Toxicity to Animals: Not available.

Detected in maternal milk in human.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause mild skin irritation, and sensitization. Eyes: Can cause eye irritation.

**Inhalation:** Breathing in small amounts of this material during normal handling is not likely to cause harmful effects. However, breathing large amounts may be harmful and may affect the respiratory system and mucous membranes (irritation), behavior and brain (Central nervous system depression - headache, dizziness, drowsiness, stupor, incoordination, unconsciousness, coma and possible death), peripheral nerve and sensation, blood, urinary system, and liver. Ingestion: Swallowing small amounts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Swallowing large amounts may cause gastrointestinal tract irritation with nausea, vomiting and diarrhea, abdominal pain. It also may affect the urinary system, cardiovascular system, sense organs, behavior or central nervous system (somnolence, generally depressed activity, irritability, headache, dizziness, drowsiness), liver, and respiratory system (breathing difficulty). Chronic Potential Health Effects: May cause defatting of the skin and dermatitis and allergic reaction. May cause adverse reproductive effects based on animal data (studies).

## Section 12: Ecological Information

### Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	10000 mg/L	96h	Fish	OECD 203	N/A	N/A
LC50	> 10000 mg/L	24h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

**Persistence and degradability:** Readily biodegradable.

**Bioaccumulative potential:** Not available.

**Mobility in soil:** Soluble in water.

**Results of PBT&vPvB assessment:** The substance is not PBT / vPvB.

**Other adverse effects:** Not available.

## Section 13: Disposal Considerations

**Waste treatment methods:** Due to the high risk of contamination recycling/recovery is not recommended. Waste disposal in accordance with regulations (most probably controlled incineration).

**Product / Packaging disposal:** According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.

## Section 14: Transport Information

	Land Transport(ADR/RID)	Sea Transport(IMDG)	Air Transport(ICAO/IATA)
<b>UN Number</b>	1219	1219	1219
<b>UN Proper shipping name</b>	Isopropyl alcohol	Isopropyl alcohol	Isopropyl alcohol
<b>Transport Hazardous Class</b>	3	3	3
<b>Packing Group</b>	II	II	II
<b>Environmental hazards</b>	No	No	No
<b>Special precautions for user</b>	See section 2.2	See section 2.2	See section 2.2
<b>Transport in bulk according to Annex II MARPOL 73/78 and the IBC CODE</b>	IBC02	IBC02	IBC02

## Section 15: Other Regulatory Information

### Safety, health and environmental regulations/legislation specific for the substance or mixture:

<b>Relevant information regarding authorization:</b>	Not applicable.
<b>Relevant information regarding restriction:</b>	Not applicable.
<b>Other EU regulations:</b>	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
<b>Other National regulations:</b>	Not applicable
<b>Chemical Safety Assessment has been carried out?</b>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

## Section 16: Other Information

### Indication of changes:

Version 1.0 Amended by EU No 453/2010

### Relevant R- phrases (number and full text):

R11: Highly flammable.

R36: Irritating to eyes.

R67: Vapours may cause drowsiness and dizziness.

### Training instructions:

Not applicable.

### Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

### Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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