SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

Product: ISOPROPYL ALCOHOL
CAS No: 67-63-0 | **EC No:** 200-661-7
Compilation Date: 20 November 2026
Revision Date: Initial Release (Rev. 1.0)
Language: English (EN)
Jurisdiction: European Union (EU)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- **Trade name / Product name:** Isopropyl alcohol
- **Chemical name (IUPAC):** Propan-2-ol
- **Synonyms:** Isopropanol; 2-Propanol; IPA; Dimethyl carbinol; sec-Propyl alcohol
- **CAS Number:** 67-63-0
- **EC Number (EINECS):** 200-661-7
- **Index Number (Annex VI, CLP):** 603-117-00-0
- **REACH Registration Number:** 01-2119457558-25-XXXX
- **Unique Formula Identifier (UFI):** Not applicable (Single substance, not a mixture)
- **Molecular Formula:** C_3H_8O / $(CH_3)_2CHOH$ | **Molecular Weight:** 60.10 g/mol

1.2 Relevant identified uses of the substance or mixture and uses advised against

- **Relevant identified uses:** Industrial solvent and extraction agent; raw material and chemical intermediate for organic synthesis; manufacturing of coatings, paints, thinners, printing inks, and varnishes; precision cleaning and degreasing agent in electronics; laboratory reagent and analytical standard; formulation of disinfectant solutions, personal care products, and rubbing alcohol; de-icing agent and windscreen washer additive.
- **Uses advised against:** Any open-surface spraying or industrial application without explosion-proof local exhaust; consumer aerosol use without static dissipative containment.

1.3 Details of the supplier of the safety data sheet

- **Manufacturer / Supplier:** Standard Industrial Chemicals Europe B.V.
- **Address:** Havenlaan 45, 1013 AA Amsterdam, The Netherlands
- **Telephone:** +31 (0) 20 555 0100 | **E-mail:** sds@indchemeurope.eu
- **Responsible Department:** Regulatory Affairs & Product Stewardship Department

1.4 Emergency telephone number

- **Company Emergency Hotline (24/7):** +31 (0) 20 555 0199 (Multilingual: EN, NL, FR, DE)
- **EU National Poison Information Centres:**
  - **Pan-European Emergency Service:** 112
  - **Germany:** Giftnotruf Berlin (Charité), Tel: +49 (0) 30 19240
  - **France:** ORFILA / INRS, Tel: +33 (0) 1 45 42 59 59
  - **Spain:** Instituto Nacional de Toxicología, Tel: +34 91 562 04 20
  - **Belgium:** Centre Antipoisons / Antigifcentrum, Tel: +32 (0) 70 245 245
  - **Netherlands:** Nationaal Vergiftigingen Informatie Centrum (NVIC), Tel: +31 (0) 88 755 8000
  - **Ireland:** National Poisons Information Centre (NPIC), Tel: +353 (0) 1 809 2166

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard Class and Category	Hazard Code	Hazard Statement
Flammable Liquids, Category 2	**H225**	Highly flammable liquid and vapour.
Serious eye damage/eye irritation, Category 2	**H319**	Causes serious eye irritation.
Specific target organ toxicity — single exposure, Category 3 (Narcotic effects)	**H336**	May cause drowsiness or dizziness.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]:



SIGNAL WORD

DANGER

Hazard Statements:

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

Precautionary Statements:

- **P210:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **P233:** Keep container tightly closed.
- **P240:** Ground and bond container and receiving equipment.
- **P241:** Use explosion-proof electrical/ventilating/lighting equipment.
- **P242:** Use non-sparking tools.
- **P243:** Take action to prevent static discharges.
- **P261:** Avoid breathing vapours/spray.
- **P264:** Wash hands and exposed skin thoroughly after handling.
- **P271:** Use only outdoors or in a well-ventilated area.
- **P280:** Wear protective gloves/eye protection/face protection.
- **P303+P361+P353:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- **P304+P340+P312:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
- **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P337+P313:** If eye irritation persists: Get medical advice/attention.
- **P370+P378:** In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray to extinguish.
- **P403+P233+P235:** Store in a well-ventilated place. Keep container tightly closed. Keep cool.
- **P405:** Store locked up.
- **P501:** Dispose of contents/container to an approved hazardous waste collection facility in accordance with national/regional regulations.

2.3 Other hazards

- **PBT / vPvB:** The substance does not fulfill the criteria for PBT or vPvB in accordance with Annex XIII of REACH.
- **Endocrine disrupting properties:** The substance does not have endocrine disrupting properties according to Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.
- **Explosion hazard:** Vapours are heavier than air (density 2.1) and may accumulate in low-lying areas, pits, and conduits. Explosive vapour-air mixtures form readily at ambient temperatures above 12 °C. Electrostatic charges readily accumulate during transfer.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance type: Mono-constituent substance

Chemical Name	Identifiers	% (w/w)	CLP Classification	SCL, M-Factor, ATE
Propan-2-ol (Isopropyl alcohol / Isopropanol)	**CAS:** 67-63-0 **EC:** 200-661-7 **Index:** 603-117-00-0 **REACH:** 01-2119457558-25-XXXX	≥ 99.5 %	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	SCL: None M-Factor: None ATE (oral): >2,000 mg/kg ATE (derm): >2,000 mg/kg ATE (inh): >20 mg/L

Impurities / Additives: Water (CAS 7732-18-5) ≤ 0.2% w/w; Acetone (CAS 67-64-1) ≤ 0.002% w/w; Diisopropyl ether (CAS 108-20-3) ≤ 0.005% w/w. None contribute to hazard classification.

3.2 Mixtures

Not applicable. The product is placed on the market as a single pure chemical substance.

SECTION 4: First aid measures

4.1 Description of first aid measures

- **General notes:** Remove affected individual from contaminated area. Show this Safety Data Sheet or product label to treating medical personnel. First aiders must wear protective gloves and avoid breathing vapours.
- **Following inhalation:** Move casualty to fresh air. If breathing is irregular or stopped, administer artificial respiration (bag-valve-mask). Keep patient warm and at rest. Seek immediate medical attention if CNS symptoms (dizziness, drowsiness, confusion) persist.
- **Following skin contact:** Immediately remove contaminated clothing. Wash skin thoroughly with soap and copious water for at least 15 minutes. If irritation develops or persists, consult a physician. Wash clothing prior to re-use.
- **Following eye contact:** Rinse cautiously with gently flowing water for at least 15 minutes while holding eyelids wide open. Remove contact lenses after the first 5 minutes if easy to do; continue rinsing. Seek immediate ophthalmological care.
- **Following ingestion:** Rinse mouth with water. **Do NOT induce vomiting** due to danger of aspiration into lungs. If spontaneous vomiting occurs, position head lower than hips. Never give anything by mouth to an unconscious person. Call a POISON CENTRE or physician immediately.
- **Self-protection of the first aider:** Avoid entering enclosed or unventilated areas without breathing apparatus. Wear nitrile/butyl gloves and safety goggles.

4.2 Most important symptoms and effects, both acute and delayed

- **Eyes:** Severe stinging, lacrimation, redness, blurred vision, conjunctival irritation, and temporary corneal injury.
- **Inhalation:** Irritation of mucous membranes, coughing, headache, lightheadedness, dizziness, fatigue, and narcosis at high concentrations.
- **Skin:** Defatting and drying of skin; prolonged contact may induce erythema and cracking.
- **Ingestion:** Nausea, vomiting, abdominal pain, CNS depression, hypotension, hypothermia, and potential chemical pneumonitis if aspirated.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively. Isopropanol is metabolised by alcohol dehydrogenase into acetone, causing prolonged ketosis without severe metabolic acidosis. Monitor vital signs, neurological status, electrolyte balance, and blood glucose. In cases of severe intoxication with profound CNS depression or coma, hemodialysis effectively removes both isopropanol and acetone.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- **Suitable extinguishing media:** Alcohol-resistant foam (AR-AFFF), carbon dioxide (CO_2), dry chemical powder, water spray or water fog.
- **Unsuitable extinguishing media:** Solid water jet (may spread burning liquid and enlarge fire area).

5.2 Special hazards arising from the substance or mixture

- **Combustion products:** Carbon monoxide (CO), carbon dioxide (CO_2), dense irritating smoke.
- **Explosion and fire hazards:** Highly flammable liquid and vapour (Flash point 12 °C). Vapours are heavier than air (relative vapour density 2.1) and may travel along the ground to distant ignition sources, flashing back. Closed containers exposed to intense heat may rupture violently.

5.3 Advice for firefighters

- Wear self-contained positive-pressure breathing apparatus (EN 137) and full firefighting protective clothing (EN 469).
- Fight fire from a protected location or safe distance. Cool intact containers with water spray until well after extinction. Prevent firefighting water runoff from entering drains, sewers, or watercourses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel:** Evacuate the danger zone immediately upwind. Remove all ignition sources: no smoking, eliminate open flames, switch off unshielded electrical equipment. Ensure adequate ventilation. Do not breathe vapours.
- **For emergency responders:** Wear full antistatic, chemical-resistant protective clothing (EN 14605) and self-contained breathing apparatus (EN 137). Use only spark-proof tools and ATEX-certified equipment.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow substance to enter drains, sewers, basements, or surface waters. Inform competent local authorities immediately if substantial contamination occurs.

6.3 Methods and material for containment and cleaning up

- **Containment:** Dike large spills with non-combustible earthen, sand, or inert barriers far ahead of the liquid. Apply an alcohol-resistant foam blanket to suppress vapour emission.
- **Clean-up:** Absorb small spills with non-combustible, liquid-binding material (e.g., vermiculite, dry sand, diatomite). Pick up with non-sparking tools and place into closed, grounded, labelled containers. For large spills, pump into grounded recovery tanks using explosion-proof pumps. Rinse spill area thoroughly with water.

6.4 Reference to other sections

See Section 1 for emergency contacts, Section 8 for exposure controls/PPE, and Section 13 for waste disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Handle in well-ventilated areas with local exhaust extraction. Keep away from heat, hot surfaces, sparks, open flames, and hot equipment. No smoking.
- Take precautionary measures against static discharges: ground and bond all transfer containers, equipment, and piping. Use non-sparking tools and ATEX-certified electrical installations.
- Avoid breathing vapours, aerosols, or mists. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Do not eat, drink, or smoke in work areas.

7.2 Conditions for safe storage, including any incompatibilities

- **Storage conditions:** Store in original, tightly closed containers in a cool, dry, well-ventilated, fireproof storage room. Recommended storage temperature: +5 °C to +25 °C. Protect from direct solar radiation. Keep bulk storage tanks blanketed with dry inert nitrogen gas.
- **Incompatibilities:** Store strictly separated from strong oxidising agents, strong mineral acids, perchlorates, halogens, and alkali metals.
- **German Storage Class (TRGS 510):** LGK 3 (Flammable liquids).

7.3 Specific end use(s)

Industrial solvent, cleaning agent, laboratory chemical, and synthesis intermediate. Adhere to operational conditions and risk management measures outlined in the Exposure Scenarios.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 National Occupational Exposure Limit Values (EU Member States)

Country / Authority	Limit Value — Eight Hours (TWA)	Limit Value — Short Term (STEL)	Regulatory Basis / Notes
Germany (AGW - TRGS 900)	200 ppm / 500 mg/m³	400 ppm / 1,000 mg/m³ (15 min)	Peak limitation 2(II); DFG, Y
France (VLEP - INRS)	200 ppm / 500 mg/m³ (recommended)	400 ppm / 980 mg/m³ (VLCT)	INRS ED 984 / Valeur indicative
Spain (INSST - VLA)	200 ppm / 500 mg/m³ (VLA-ED)	400 ppm / 1,000 mg/m³ (VLA-EC)	Límites de Exposición Profesional
Belgium (SPF Emploi)	200 ppm / 500 mg/m³	400 ppm / 1,000 mg/m³	Arrêté royal Valeurs limites
Ireland (HSA - CoP)	200 ppm / 492 mg/m³ (OELV)	400 ppm / 983 mg/m³ (STEL 15m)	Sk (Cutaneous absorption)
Austria (GKV - BMAW)	200 ppm / 500 mg/m³ (MAK)	800 ppm / 2,000 mg/m³ (Kurzzeit)	4 x 15 min per shift
Sweden (AFS)	150 ppm / 350 mg/m³ (NGV)	250 ppm / 600 mg/m³ (KTV 15m)	Arbetsmiljöverket föreskrifter

8.1.2 Biological Limit Values (BLV)

- **Germany (TRGS 903 - BAT):** Acetone: 25 mg/L in whole blood or urine (sampling time: end of exposure / shift).
- **Spain (INSST - VLB):** Acetone: 40 mg/L in urine (sampling time: end of workweek).

8.1.3 Derived No-Effect Levels (DNEL) according to REACH

Target Population	Route of Exposure	Health Effect / Duration	DNEL Value
Workers	Inhalation	Long-term systemic effects	**500 mg/m³**
Workers	Dermal	Long-term systemic effects	**888 mg/kg bw/day**
Consumers	Inhalation	Long-term systemic effects	**89 mg/m³**
Consumers	Dermal	Long-term systemic effects	**319 mg/kg bw/day**
Consumers	Oral	Long-term systemic effects	**26 mg/kg bw/day**

8.1.4 Predicted No-Effect Concentrations (PNEC) according to REACH

Environmental Compartment	PNEC Value	Assessment Factor / Methodology
Freshwater	**140.9 mg/L**	Assessment factor = 1
Marine water	**140.9 mg/L**	Assessment factor = 1
Freshwater sediment	**552 mg/kg dry weight**	Partition coefficient method
Marine sediment	**552 mg/kg dry weight**	Partition coefficient method
Soil	**28 mg/kg dry weight**	Partition coefficient method
Sewage treatment plant (STP)	**2,251 mg/L**	Assessment factor = 1
Intermittent release (water)	**140.9 mg/L**	Assessment factor = 1
Secondary poisoning (oral)	**160 mg/kg food**	Biomagnification factor

8.2 Exposure controls

- **Appropriate engineering controls:** Provide explosion-proof mechanical local exhaust and general dilution ventilation. Ensure all electrical equipment conforms to Directive 2014/34/EU (ATEX). Provide quick-drench eye wash stations and emergency deluge showers in the working area.
- **Individual protection measures (PPE):**
  - **Eye/face protection:** Tightly fitting chemical safety goggles conforming to EN 166. Use full-face shield if splashing or pressurized liquid transfer is possible.

- **Hand protection:** Chemical-resistant gloves conforming to EN 374. Recommended: Butyl rubber (thickness ≥ 0.5 mm, breakthrough time > 480 min, Level 6) or Viton. For splash contact: Nitrile rubber (thickness ≥ 0.35 mm, breakthrough time ~ 30-60 min). Avoid latex or PVC.
- **Skin/body protection:** Antistatic, flame-retardant protective overall conforming to EN 1149 and EN ISO 11612. Antistatic safety boots (EN ISO 20345, S3).
- **Respiratory protection:** Half-mask or full-face mask with Type A filter (organic vapours, boiling point > 65 °C, brown code, EN 14387). In confined spaces or heavy exposure, wear positive-pressure self-contained breathing apparatus (SCBA, EN 137).
- **Thermal hazards:** Not applicable under standard operating conditions.

• **Environmental exposure controls:** Avoid unmonitored atmospheric or drainage discharge. Exhaust air must be treated via condensing scrubbers or thermal oxidisers pursuant to Directive 2010/75/EU.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property Parameter	Value	Test Method / Reference Notes
Physical state	Liquid	Visual inspection at 20 °C and 101.3 kPa
Colour	Colourless, clear	Standard visual test
Odour	Characteristic, alcohol-like, pleasant	Sensory evaluation
Odour threshold	22 – 100 mg/m³ (approx. 9 – 40 ppm)	Literature value
Melting point / freezing point	-89.5 °C (-129.1 °F)	Standard crystallisation test
Initial boiling point / range	82.3 – 82.5 °C (180.1 – 180.5 °F)	ASTM D1078 at 101.3 kPa (760 mmHg)
Flammability	Highly flammable liquid and vapour	Regulation (EC) No 1272/2008 criteria met
Lower explosion limit (LEL)	2.0 % (vol) / 50 g/m³	DIN 51649 / EN 1839
Upper explosion limit (UEL)	12.0 – 13.0 % (vol) / 330 g/m³	DIN 51649 / EN 1839
Flash point	**12 °C (53.6 °F)**	Closed cup: Abel-Pensky / ASTM D93
Auto-ignition temperature	399 °C – 425 °C (750 – 797 °F)	DIN 51794
Decomposition temperature	Not established (> 400 °C)	Stable under normal ambient conditions
pH	Neutral (~ 7 at 20 °C)	100 g/L aqueous solution at 20 °C
Kinematic viscosity	2.65 mm²/s at 20 °C | 1.72 mm²/s at 40 °C	Calculated (dynamic viscosity / density)
Dynamic viscosity	2.05 – 2.43 mPa·s at 20 °C | 1.33 mPa·s at 40 °C	Ubbelohde capillary viscometer
Solubility in water	Completely miscible (≥ 1,000 g/L at 20 °C)	OECD Guideline 105
Solubility in other solvents	Miscible with ethanol, ether, acetone, chloroform	Fully soluble in common organic solvents
Partition coefficient (log Kow)	**0.05 at 25 °C**	OECD Guideline 107 (Shake-flask)
Vapour pressure	42.4 hPa (31.8 mmHg) at 20 °C 60.2 hPa (45.2 mmHg) at 25 °C	Dynamic vapour pressure method
Density	0.785 – 0.786 g/cm³ at 20 °C	DIN 51757 / ASTM D4052
Relative density	0.786 (water = 1.0 at 20 °C)	Pycnometer method
Relative vapour density	**2.07 – 2.10 (air = 1.0)**	Heavier than air (accumulation hazard)
Particle characteristics	Not applicable	Substance is a homogeneous liquid

9.2 Other information

• **Physical hazard classes:** Not explosive (forms explosive vapour/air mixtures). Not oxidising. Not corrosive to metals.

• **Other safety characteristics:**

- Evaporation rate (n-butyl acetate = 1): 1.5 – 2.3 | Evaporation rate (Ether = 1): 11
- Surface tension: 21.7 mN/m at 20 °C | Refractive index (nD20): 1.377 – 1.378

- Electrical conductivity: 3.5 × 10^{-6} S/m (low conductivity, static charge accumulator)
- Heat of combustion: -33.4 kJ/g | Critical temperature: 235.2 °C | Critical pressure: 4.76 MPa

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapours form explosive mixtures with air. Reacts exothermically with strong oxidising agents.

10.2 Chemical stability

Stable under recommended storage conditions (+5 °C to +25 °C). Upon prolonged exposure to air, light, and heat in uninhibited containers, it may slowly form organic peroxides.

10.3 Possibility of hazardous reactions

- Violent, potentially explosive reaction with strong oxidants (chromium trioxide, perchlorates, nitric acid, concentrated hydrogen peroxide).
- Exothermic reaction with halogens and halogenated compounds.
- Reaction with alkali metals (sodium, potassium) generates flammable hydrogen gas.
- Corrosive or violent attack on aluminium and barium at elevated temperatures.

10.4 Conditions to avoid

Heat, flames, hot surfaces, sparks, static discharge, and direct solar exposure. Do not distill to dryness.

10.5 Incompatible materials

Strong oxidising agents, strong mineral acids, strong alkalis, aldehydes, amines, chlorinated solvents, aluminium.

10.6 Hazardous decomposition products

None under normal storage. Carbon monoxide (CO) and carbon dioxide (CO_2) are released during thermal decomposition or combustion.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- **(a) Acute toxicity:** Not classified.
  - *Oral (Rat):* LD_{50} = 5,045 mg/kg body weight (OECD 401; literature range 4,710 – 5,840 mg/kg bw).
  - *Dermal (Rabbit):* LD_{50} = 12,870 mg/kg body weight (OECD 402; range 12,800 – 13,900 mg/kg bw).
  - *Inhalation (Rat, vapour):* LC_{50} > 10,000 ppm / 6 h (> 25 mg/L / 6 h; equivalent to > 72.6 mg/L / 4 h, OECD 403).
- **(b) Skin corrosion / irritation:** Not classified. Rabbit (OECD 404): Slightly irritating, fully reversible within 72h. Repeated exposure may cause skin defatting, dryness, and cracking.
- **(c) Serious eye damage / eye irritation: Classified as Eye Irritation, Category 2 (H319: Causes serious eye irritation).** Rabbit (OECD 405): Moderate conjunctival redness, chemosis, and corneal opacity; lesions reversible within 7–14 days.
- **(d) Respiratory or skin sensitisation:** Not classified. Guinea pig Maximisation Test (OECD 406): Negative. No respiratory sensitisation observed.
- **(e) Germ cell mutagenicity:** Not classified. Negative in Ames test (OECD 471), in vitro mammalian gene mutation (OECD 476), chromosome aberration (OECD 473), and in vivo micronucleus test (OECD 474).
- **(f) Carcinogenicity:** Not classified. Two-year inhalation study (OECD 451, rat/mouse): NOAEL ≥ 5,000 ppm (no oncogenic effects). Evaluated as IARC Group 3 (Not classifiable as to human carcinogenicity).
- **(g) Reproductive toxicity:** Not classified. Two-generation rat reproduction study (OECD 416): NOAEL = 500 mg/kg bw/day (no fertility impairment). Teratogenicity study (OECD 414): NOAEL maternal = 400 mg/kg bw/day; NOAEL developmental = 1,200 mg/kg bw/day (no malformations).
- **(h) STOT — single exposure: Classified as STOT SE 3 (H336: May cause drowsiness or dizziness).** Vapours produce transient central nervous system depression, lethargy, ataxia, and narcotic effects.
- **(i) STOT — repeated exposure:** Not classified. Subchronic rat oral study (90d, OECD 408): NOAEL = 900 mg/kg bw/day. Inhalation study (90d, OECD 413): NOAEC = 500 ppm (1,250 mg/m^3).
- **(j) Aspiration hazard:** Not classified. Kinematic viscosity is 2.65 mm^2/s at 20 °C. The substance is an alcohol and does not meet the hydrocarbon aspiration hazard criteria. Aspiration risk remains if vomited after ingestion.

11.2 Information on other hazards

- **11.2.1 Endocrine disrupting properties:** The substance does not have endocrine disrupting properties for humans according to Regulation (EU) 2017/2100 or (EU) 2018/605.
- **11.2.2 Other information / Toxicokinetics:** Rapidly absorbed across GI and respiratory tracts. Metabolised by hepatic alcohol dehydrogenase into acetone; acetone is excreted slowly via pulmonary exhalation and kidneys (elimination half-life 10–22 hours).

SECTION 12: Ecological information

12.1 Toxicity

- **Fish (Pimephales promelas - Fathead minnow):** 96h LC_{50} = 9,640 – 10,000 mg/L (OECD 203, flow-through).
- **Fish (Leuciscus idus - Golden orfe):** 48h LC_{50} > 8,970 mg/L.
- **Aquatic invertebrates (Daphnia magna):** 24h/48h EC_{50} > 10,000 mg/L (OECD 202, static; 48h EC_{50} = 13,299 mg/L).
- **Aquatic plants / Algae (Desmodesmus subspicatus):** 72h / 8d EC_{50} > 1,000 mg/L (cell multiplication inhibition).
- **Microorganisms (Pseudomonas putida):** 16h EC_{50} = 1,050 mg/L (DIN 38412, part 8).
- **Chronic toxicity (Daphnia magna):** 21d NOEC = 30 mg/L (OECD 211, reproduction).
- **Ecotoxicity assessment:** LC_{50}/EC_{50} values far exceed 100 mg/L; substance is not classified as hazardous to the aquatic environment under CLP.

12.2 Persistence and degradability

Readily biodegradable in water. Test OECD 301 E / OECD 301 D demonstrates > 70% to 86% degradation within 5–14 days and > 95% within 21 days. BOD_5 / COD ratio is 0.53 – 0.65. Tropospheric half-life via hydroxyl radical reaction is 1.5 – 3.2 days.

12.3 Bioaccumulative potential

Partition coefficient log Kow = 0.05 at 25 °C. Calculated Bioconcentration Factor (BCF) is 3.16. Potential for bioaccumulation in aquatic organisms is negligible.

12.4 Mobility in soil

High mobility in porous soil (estimated adsorption coefficient Koc = 1.5). Henry's Law constant is 8.10×10^{-6} atm·m³/mol (0.82 Pa·m³/mol) at 25 °C. Rapid volatilisation from soil and water surfaces into the atmosphere occurs.

12.5 Results of PBT and vPvB assessment

The substance does not meet the criteria for PBT or vPvB set out in Annex XIII of Regulation (EC) No 1907/2006.

12.6 Endocrine disrupting properties

The substance does not have endocrine disrupting properties with respect to non-target organisms according to Regulation (EU) 2017/2100 or Regulation (EU) 2018/605.

12.7 Other adverse effects

German Water Hazard Class (AwSV): WGK 1 — Low hazard to waters (Kenn-Nr. 224). Ozone Depletion Potential (ODP): 0. Photochemical Ozone Creation Potential (POCP): 0.6.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- **Product disposal:** Recover and reclaim solvent by fractional distillation where technically feasible. Incinerate non-recoverable residues in an approved chemical incineration facility equipped with an afterburner and scrubber in compliance with Directive 2008/98/EC. Do not discharge into sewers, watercourses, or soil.
- **European Waste Catalogue (EWC) codes:**
  - **07 01 04*:** Other organic solvents, washing liquids and mother liquors (hazardous waste).
  - **14 06 03*:** Other solvents and solvent mixtures (hazardous waste).
  - **16 05 06*:** Laboratory chemicals consisting of or containing hazardous substances (hazardous waste).
- **Packaging disposal:** Empty containers contain flammable and explosive vapour residues. Do not puncture, cut, weld, or braze uncleaned containers. Return reusable drums to supplier or dispose of via an authorized hazardous waste contractor. EWC code: **15 01 10*** (Packaging containing residues of hazardous substances).

SECTION 14: Transport information

Transport Parameter	ADR / RID / ADN (Road/Rail)	IMDG Code (Sea)	ICAO-TI / IATA-DGR (Air)
14.1 UN number or ID number	**UN 1219**	**UN 1219**	**UN 1219**
14.2 UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)	ISOPROPANOL (ISOPROPYL ALCOHOL)	ISOPROPANOL
14.3 Transport hazard class	Class 3 (Flammable Liquid, F1)	Class 3 (Flammable Liquid)	Class 3 (Flammable Liquid)
14.4 Packing group	**Packing Group II**	**Packing Group II**	**Packing Group II**
14.5 Environmental hazards	No	Marine Pollutant: **No**	No
14.6 Special precautions for user	Kemler Code: **33** Tunnel Restriction: **D/E** Limited Quantity: 1 L Excepted Quantity: E2	EmS: **F-E, S-D** Stowage Category: B Flash Point: 12 °C c.c.	Passenger Aircraft: 353 (5 L) Cargo Aircraft: 364 (60 L) ERG Code: 3L

14.7 Maritime transport in bulk according to IMO instruments

- **Product name:** Isopropyl alcohol
- **IBC Code Chapter 17:** Pollution Category Z | Ship Type: 3
- **MARPOL Annex II:** Rules governing bulk chemical carriage apply.

SECTION 15: Regulatory information

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

15.1.1 EU Regulations

- **Regulation (EC) No 1907/2006 (REACH):**
  - *Annex XIV (Authorisation List):* Not listed.
  - *Annex XVII (Restrictions on manufacture, placing on the market and use):* Entry 3 (Liquid substances fulfilling CLP criteria); Entry 40 (Flammable liquids in aerosol dispensers for decorative/entertainment purposes).
  - *Candidate List of SVHC for Authorisation:* Not listed.
- **Regulation (EC) No 1272/2008 (CLP):** Harmonised classification pursuant to Annex VI, Index No 603-117-00-0.
- **Directive 2012/18/EU (Seveso III Directive):** Qualifying Category **P5c FLAMMABLE LIQUIDS**. Lower-tier threshold: 5,000 tonnes; Upper-tier threshold: 50,000 tonnes.
- **Directive 2010/75/EU on industrial emissions (IED):** VOC content: 100% w/w (785 g/L).
- **Regulation (EU) 2019/1148 (Explosives Precursors):** Not listed.
- **Regulation (EC) No 1005/2009 (Ozone Depleting Substances):** Not listed.

15.1.2 National Regulations (Selected EU Member States)

- **Germany:** WGK 1 (AwSV, Kenn-Nr. 224, low hazard to waters); TRGS 510 Storage Class LGK 3; TRGS 900 AGW 200 ppm / 500 mg/m³.
- **France:** Code du travail Articles R4412-1 à R4412-160; Tableau des maladies professionnelles n° 84 (affections dues aux solvants organiques).
- **Netherlands:** SZW-lijst: Not classified CMR; Algemene Beoordelingsmethodiek (ABM): Waterbezwaarlijkheid B4.

15.2 Chemical safety assessment

A Chemical Safety Assessment (CSA) pursuant to Article 14(1) of Regulation (EC) No 1907/2006 (REACH) has been carried out for this substance. Exposure Scenarios are incorporated into the Chemical Safety Report and attached as an annex to this extended Safety Data Sheet.

SECTION 16: Other information

16.1 Indication of changes

- **Version 1.0 (20 November 2026):** Initial complete generation in full compliance with Commission Regulation (EU) 2020/878 amending Annex II to REACH. Restructured Section 9 physical-chemical parameters and integrated endocrine disrupting properties disclosures in Sections 2.3, 11.2, and 12.6.

16.2 Abbreviations and acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways | **ADR:** Agreement concerning the International Carriage of Dangerous Goods by Road | **AGW:** Arbeitsplatzgrenzwert | **ATE:** Acute Toxicity Estimate | **BCF:** Bioconcentration Factor | **CLP:** Classification, Labelling and Packaging Regulation (EC) No 1272/2008 | **DNEL:** Derived No-Effect Level | **EC50:** Median Effective Concentration | **ECHA:** European Chemicals Agency | **IATA:** International Air Transport Association | **IBC Code:** International Bulk Chemical Code | **IMDG:** International Maritime Dangerous Goods Code | **LC50:** Lethal Concentration 50% | **LD50:** Lethal Dose 50% | **NOAEL:** No Observed Adverse Effect Level | **OECD:** Organisation for Economic Co-operation and Development | **OEL:** Occupational Exposure Limit | **PBT:** Persistent, Bioaccumulative and Toxic | **PNEC:** Predicted No-Effect Concentration | **REACH:** Registration, Evaluation, Authorisation and Restriction of Chemicals (EC 1907/2006) | **RID:** Regulations concerning the International Carriage of Dangerous Goods by Rail | **SCBA:** Self-Contained Breathing Apparatus | **STEL:** Short-Term Exposure Limit | **STOT SE / RE:** Specific Target Organ Toxicity (Single / Repeated Exposure) | **TWA:** Time-Weighted Average | **vPvB:** Very Persistent and Very Bioaccumulative | **WGK:** Wassergefährdungsklasse (German Water Hazard Class)

16.3 Key literature references and sources for data

- European Chemicals Agency (ECHA) Registered Substances Dossier: Propan-2-ol (CAS 67-63-0, EC 200-661-7).
- Regulation (EC) No 1272/2008 (CLP), Annex VI Table 3: Harmonised classification Index No 603-117-00-0.
- National Library of Medicine (NLM) PubChem CID 3776 & Hazardous Substances Data Bank (HSDB).
- GESTIS Substance Database (IFA - Institut für Arbeitsschutz der DGUV, ZVG 10830).
- Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 (REACH).

16.4 Classification and procedure used to derive the classification according to Regulation (EC) No 1272/2008

Classification (CLP)	Classification Procedure
Flammable Liquids, Category 2 (H225)	On basis of test data (Flash point: 12 °C, Boiling point: 82.4 °C)
Serious eye damage/eye irritation, Category 2 (H319)	Harmonised classification (Annex VI to CLP) / Test data (OECD 405)
Specific target organ toxicity — single exposure, Category 3 (H336)	Harmonised classification (Annex VI to CLP) / Human evidence of narcotic effects

16.5 Relevant hazard and precautionary statements

- **H225:** Highly flammable liquid and vapour.
- **H319:** Causes serious eye irritation.
- **H336:** May cause drowsiness or dizziness.
- **P210:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **P233:** Keep container tightly closed.
- **P240:** Ground and bond container and receiving equipment.
- **P241:** Use explosion-proof electrical/ventilating/lighting equipment.
- **P242:** Use non-sparking tools.
- **P243:** Take action to prevent static discharges.
- **P261:** Avoid breathing vapours/spray.
- **P280:** Wear protective gloves/eye protection/face protection.
- **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P337+P313:** If eye irritation persists: Get medical advice/attention.
- **P370+P378:** In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray to extinguish.
- **P403+P235:** Store in a well-ventilated place. Keep cool.
- **P501:** Dispose of contents/container to an approved hazardous waste collection facility.

16.6 Training advice

Workers handling this substance must be trained on the physical and health hazards of flammable solvents, required personal protective equipment, electrostatic explosion protection, safe storage, spill containment, and emergency first aid procedures.

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of publication. It is intended solely as guidance for safe handling, use, processing, storage, transport, and disposal. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process.