

1. Identification of the substance/preparation and of the company/undertaking*Identification of the product*

Catalogue No.: 100992
Product name: 2-Propanol (isopropyl alcohol) Selectipur®

Manufacturer/supplier identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation in your country.

2. Composition/information on ingredients*Synonyms*

iso-Propanol, Isopropanol, Isopropyl alcohol, iso-Propyl alcohol

CAS-No.:	67-63-0	EC-Index-No.:	603-117-00-0
M:	60.10 g/mol	EC-No.:	200-661-7
Formula Hill:	C ₃ H ₈ O		
Chemical formula:	CH ₃ CH(OH)CH ₃		

3. Hazards identification

Highly flammable. Irritating to eyes. Vapours may cause drowsiness and dizziness.

4. First aid measures

After inhalation: fresh air. Consult doctor if feeling unwell.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water. If pain persists, summon eye specialist.
After swallowing: make victim drink plenty of water, avoid vomiting (risk of aspiration!).
In case of spontaneous vomiting: Risk of aspiration. Pulmonary failure possible. Summon doctor.

5. Fire-fighting measures

Suitable extinguishing media:
powder, foam.

Special risks:

Combustible. Vapours heavier than air. Forms explosive mixtures with air at ambient temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Other information:

Prevent fire-fighting water from entering surface water or groundwater. Take measures to prevent electrostatic charging. Keep away from sources of ignition. Cool container with spray water from a safe distance.

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6. Accidental release measures

Person-related precautionary measures:

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system; risk of explosion!

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

Notes for prevention of fire and explosion:

Take measures to prevent electrostatic charging. Keep away from sources of ignition.

Notes for safe handling:

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. At +5°C to +30°C.

Requirements for storage rooms and containers:

Do not use light-weight-metal containers.

8. Exposure controls/personal protection

Specific control parameter

German regulations

MAK Germany (max. workplace conc.)

Name	Propan-2-ol
Value	200 ml/m ³
	500 mg/m ³
Peak limit	II, I resorptive substance, 2 x TLV
Embryotoxic	cat. C no risk expected by maintaining TLV

Personal protective equipment:

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection: required

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

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9. Physical and chemical properties

Form:		liquid		
Colour:		colourless		
Odour:		alcohol-like		
pH value				
at	(20 °C)	neutral		
Viscosity dynamic	(20 °C)	2.2	mPa*s	
Melting point		-89.5	°C	
Boiling point	(1013 hPa)	82.4	°C	
Ignition temperature		425	°C	
Flash point		12	°C	c.c.
		17	°C	o.c.
		o.c.		
Explosion limits	lower	2	Vol%	
	upper	12.7	Vol%	
Vapour pressure	(20 °C)	43	hPa	
Relative vapour density		2.07		
Density	(20 °C)	0.786	g/cm ³	
Solubility in				
water	(20 °C)	soluble		
ether		soluble		
log P(oct):		0.05		(experimental)
Bioconcentration factor		0.5		(calculated)

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

alkali metals, alkaline earth metals, aluminium, oxidizing agent (i.a. perchlorates, CrO₃, nitric acid, nitrogen oxides, hydrogen peroxide), organic nitro compounds, aldehydes, amines, iron, fuming sulfuric acid, phosgene.

Hazardous decomposition products

with air Formation of peroxides possible.

Further information

highly inflammable; hygroscopic;
Solvent for: oils, rubber;
unsuitable working materials: various plastics, rubber;
Explosible with air in a vaporous/gaseous state.

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11. Toxicological information*Acute toxicity*

LDLo (oral, human): 3570 mg/kg.
LD₅₀ (oral, rat): 5045 mg/kg.
LC₅₀ (inhalation, rat): 46.5 mg/l /4 h.
LD₅₀ (dermal, rabbit): 12800 mg/kg.

Specific symptoms in animal studies:
Skin irritation test (rabbit): Slight irritations

Subacute to chronic toxicity

An embryotoxic effect need not be feared when the threshold limit value is observed.
Noncarcinogenic in animal experiments.
No impairment of reproductive performance in animal experiments.
No teratogenic effect in animal experiments.

Sensitization test (guinea pig): negative.

Bacterial mutagenicity: Ames-Test: negative.
Salmonella typhimurium: negative.

Mikronucleus-Test: negative.

Further toxicological information

After inhalation: Irritation symptoms in the respiratory tract. drowsiness, drowsiness.
After skin contact: Degreasing effect on the skin, possibly followed by secondary inflammation.
After eye contact: Irritations.
After swallowing: After accidental swallowing the substance may pose a risk of aspiration.
Passage into the lung (vomiting!) can result in a condition resembling pneumonia (chemical pneumonitis).
After absorption: headache, dizziness, inebriation, unconsciousness, narcosis.
After uptake of large quantities: respiratory paralysis, coma.

Further data

The product should be handled with the care usual when dealing with chemicals.

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12. Ecological information

Abiotic degradation:
Rapid degradation. (air)

Biologic degradation:
Biodegradation: 95 % /21 d modified OECD screening test
Readily biodegradable.

Behavior in environmental compartments:
Distribution: log p(o/w): 0.05 (experimental).
No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects: Toxic effect on fish and plankton. According to current knowledge, does not cause interferences in waste water treatment if used appropriately.

Fish toxicity: *P.promelas* LC₅₀: 9640 mg/l /96 h. *Daphnia* toxicity: *Daphnia magna* EC₅₀: 13299 mg/l /48

h. Algal toxicity: *Desmodesmus subspicatus* IC₅₀: >1000 mg/l /72 h. Bacterial toxicity:

Photobacterium phosphoreum EC₅₀: 22000 mg/l /15 min microtox test. Maximum permissible toxic concentration:

Algal toxicity: *Sc.quadricauda* IC₅: 1800 mg/l /8 d. Bacterial toxicity: *Ps.putida* EC₅: 1050 mg/l /16

h. *M.aeruginosa* EC₅: 1000 mg/l /8 d. Protozoa: *E.sulcatum* EC₅: 4930 mg/l /72 h.

Further ecologic data:
TOD: 2.40 g/g. BOD 49 % from TOD /5 d. COD 96 % from TOD.

No ecological problems are to be expected when the product is handled and used with due care and attention.

13. Disposal considerations

Product:

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging:

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

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14. Transport information

Land transport	GGVS, GGVE, ADR, RID
Classification	3/3b
Name	1219 ISOPROPANOL (ISOPROPYLALKOHOL)
River transport	ADN, ADNR
Classification	not tested
Sea transport	IMDG, GGVSee
Classification	3.2/UN 1219/PG II
Ems	3-06
MFAG	305
Name	ISOPROPANOL
Air transport	ICAO, IATA
Classification	3/UN 1219/PG II
Name	ISOPROPANOL

The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVS/GGVE). Possible national deviations in other countries are not considered.

15. Regulatory information

Labelling according to EC Directives

Symbol:	F	Highly flammable
	Xi	Irritant
R-phrases:	11-36-67	Highly flammable. Irritating to eyes. Vapours may cause drowsiness and dizziness.
S-phrases:	7-16-24/25-26	Keep container tightly closed. Keep away from sources of ignition - No smoking. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
EC-No.:	200-661-7	EC label

16. Other information

Reason for alteration

Change in the chapter on toxicology.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.