

We encourage and expect you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name	Isopropanol
Identification of the substance	2-Propanol
Registration number (REACH)	01-2119457558-25-xxxx
Index No	603-117-00-0
EC number	200-661-7
CAS number	67-63-0

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

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

AprintaPro GmbH
 Römergasse 1a
 2353 Guntramsdorf
 Austria

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: +43 660 4991879
 Local Emergency Contact: +43 660 4991879
 National Poisons Information Service City Hospital 844 892 0111

2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	(Flam. Liq. 2)	H225
3.3	serious eye damage/eye irritation	(Eye Irrit. 2)	H319
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	(STOT SE 3)	H336

2.2 Label elements

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

Signal word

Danger

Pictograms



GHS02, GHS07

Hazard statements

H225

Highly flammable liquid and vapour

H319

Causes serious eye irritation

H336

May cause drowsiness or dizziness

Precautionary statements

Precautionary statements - prevention

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233

Keep container tightly closed.

Precautionary statements - response

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards

There is no additional information.

3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

This product is a substance.

Name of substance	2-Propanol
Index No	603-117-00-0
Registration number (REACH)	01-2119457558-25-xxxx
EC number	200-661-7
CAS number	67-63-0
Molecular formula	C ₃ H ₈ O
Molar mass	60,1 g/mol

4: FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

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Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Drowsiness, Headache, Vertigo, Dizziness, Narcosis, Breathing difficulties.

4.3 Indication of any immediate medical attention and special treatment needed

none.

5: FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**Co-ordinate fire-fighting measures to the fire surroundings water spray, foam, alcohol resistant foam, dry extinguishing powder, carbon dioxide (CO₂)**Unsuitable extinguishing media**

none

5.2 Special hazards arising from the substance or mixture

Combustible. Vapours can form explosive mixtures with air.

Hazardous combustion productsIn case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO₂).**5.3 Advice for firefighters**

Vapours are heavier than air. Beware of reignition. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Do not breathe vapour/spray. Avoid contact with skin and eyes. Avoidance of ignition sources. Provide adequate ventilation.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Explosive properties.

6.3 Methods and materials for containment and cleaning up Small spills**Advice on how to contain a spill**

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials:

see section 10. Disposal considerations: see section 13.

7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide adequate ventilation as well as local exhaustion at critical locations. When not in use, keep containers tightly closed.

Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge.

Advice on general occupational hygiene

Wash hands before breaks and after work. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. May cause decomposition by long-term light influence.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<u>Component</u>	<u>Regulation</u>	<u>Type of listing</u>	<u>Value</u>
propan-2-ol	EH40/ 2005	WEL-TWA	999mg/m ³ 400 ppm
	EH40/2005	WEL-STEL	1250mg/m ³ 500 ppm

Notation

STEL

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

human health values

		<u>Workers</u>	<u>Consumers</u>
Acute systemic effects	Dermal	n.a.	n.a.
	Inhalation	n.a.	n.a.
Acute local effects	Dermal	n.a.	n.a.
	Inhalation	n.a.	n.a.
Long-term systemic effects	Dermal	888 mg/kg bw/day	n.a.
	Inhalation	500 mg/m ³	n.a.
	Oral	n.a.	n.a.
Long-term local effects	Dermal	n.a.	n.a.
	Inhalation	n.a.	n.a.

Predicted No Effect Concentration

Environmental compartment	Threshold level
freshwater	140,9 mg/l
marine water	140,9 mg/l
sewage treatment plant (STP)	2.251 mg/l
freshwater sediment	552 mg/kg
marine sediment	552 mg/kg
soil	28 mg/kg

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection/hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

type of material	NBR (Nitrile rubber)
material thickness	0,4 mm
breakthrough times of the glove material	>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Flame-retardant protective clothing.

Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties Appearance**Appearance**

Physical state	liquid (fluid)
Colour	colourless
Odour	like: alcohol
Odour threshold	1 – 196 ppm

Other physical and chemical parameters

pH (value)	(neutral)
Melting point/freezing point	-89 °C
Initial boiling point and boiling range	82 – 83 °C at 1.013 hPa
Flash point	12 °C (closed cup)
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)

Explosive limits

lower explosion limit (LEL)	2 vol%
upper explosion limit (UEL)	13,4 vol%
Explosion limits of dust clouds	not relevant
Vapour pressure	43 hPa at 20 °C
Density	0,79 g/cm ³ at 20 °C
Vapour density	2,07 (air = 1)
Bulk density	Not applicable
Relative density	Information on this property is not available.
Solubility(ies)	
Water solubility	miscible in any proportion

Partition coefficient

n-octanol/water (log KOW)	0,05
Auto-ignition temperature	425 °C - (DIN 51794)
Decomposition temperature	no data available

Viscosity

dynamic viscosity	2,2 mPa s at 20 °C
Explosive properties	Shall not be classified as explosive
Oxidising properties	none

9.2 Other information

Temperature class (EU, acc. to ATEX)	T2 (Maximum permissible surface temperature on the equipment: 300°C)
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10: STABILITY AND REACTIVITY**10.1 Reactivity**

Risk of ignition. Vapours can form explosive mixtures with air.

10.2 Chemical stability

Reactivity if exposed to air.

10.3 Possibility of hazardous reactions

Exothermic reaction with: Strong oxidiser, Nitric acid, Iron, Strong acid, Aldehydes, Aluminium, Amines,

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Danger of explosion: Chlorates, Nitro compound, Hydrogen peroxide, Phosgene.

10.4 Conditions to avoid

Keep away from heat.

10.5 Incompatible materials

plastic and rubber.

10.6 Hazardous decomposition products

Peroxides.

11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

Exposure route	Endpoint	Wert	Species	Source
inhalation: vapour	LC50	37,5 mg/l/4h	Rat	OECD-403
oral	LD50	5.045 mg/kg	Rat	RTECS
dermal	LD50	12.800 mg/kg	Rabbit	RTECS

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed	data are not available
If in eyes	Causes serious eye irritation
If inhaled	fatigue, dizziness
If on skin	repeated exposure may cause skin dryness or cracking

Other information

Other adverse effects: Vertigo, Headache, Narcosis, Dyspnoea

12: ECOLOGICAL INFORMATION

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	9.640 mg/l	Pimephales promelas		96 h

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
LC50	>10.000 mg/l	aquatic invertebrates	ECHA	24 h

12.2 Persistence and degradability

The substance is readily biodegradable.

Theoretical Oxygen Demand: 2,396 mg/mg

Theoretical Carbon Dioxide: 2,197 mg/mg

Process	Degradation rate	Time
biotic/abiotic	95 %	21 d
oxygen depletion	53 %	5 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW) 0,05

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management

facilities. Please consider the relevant national or regional provisions.

14: TRANSPORT INFORMATION

UN number 1219	
UN proper shipping name	ISOPROPANOL
Hazardous ingredients	2-Propanol
Transport hazard class(es)	Class 3 (flammable liquids)
Packing group	II (substance presenting medium danger)
Environmental hazards	none
Special precautions for user	Provisions for dangerous goods (ADR) should be complied with.
Transport in bulk according to Annex II of MARPOL and the IBC Code	The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1219
Proper shipping name	ISOPROPANOL
Particulars in the transport document	UN1219, ISOPROPANOL, 3, II, (D/E)
Class	3
Classification code	F1
Packing group	II
Danger label(s)	3
Special provisions (SP)	601
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	33
Emergency Action Code	2YE

International Maritime Dangerous Goods Code (IMDG)

UN number	1219
Proper shipping name	ISOPROPANOL
Particulars in the shipper's declaration	UN1219, ISOPROPANOL, 3, II, 12°C c.c.
Class	3
Marine pollutant	-
Packing group	II
Danger label(s)	3
Special provisions (SP)	-
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-D
Stowage category	B

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1219
Proper shipping name	Isopropanol
Particulars in the shipper's declaration	UN1219, Isopropanol, 3, II
Class	3
Packing group	II

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Danger label(s)	3
Special provisions (SP)	A180
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L

15: REGULATORY INFORMATION

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

Relevant provisions of the European Union (EU)

Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)

Not listed.

Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)

Not listed.

Regulation 850/2004/EC on persistent organic pollutants (POP)

Not listed.

Restrictions according to REACH, Title VIII

None.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

not listed

Seveso Directive

2012/18/EU (Seveso III)			
No.	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
P5c	flammable liquids (cat. 2, 3)	5.000 - 50.000	51)

Notation

51) Flammable liquids, categories 2 or 3 not covered by P5a and P5b

Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content 100 %

VOC content 786 g/l

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy

not listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

not listed

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

16: OTHER INFORMATION

Abbreviations and acronyms

Abk	Beschreibungen der verwendeten Abkürzungen
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
SVHC	Substance of Very High Concern
TWA	time-weighted average
VOC	Volatile Organic Compounds

Abk	Beschreibungen der verwendeten Abkürzungen
vPvB	very Persistent and very Bioaccumulative
WEL	workplace exposure limit

Key literature references and sources for data

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Regulation (EC) No. 1272/2008 (CLP, EU GHS)

Dangerous Goods Regulations (DGR) for the air transport (IATA)

International Maritime Dangerous Goods Code (IMDG)

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.