



PRODUCT: ISOPROPANOL (IPA) REVISION: 14 DATED: 24/11/2023 PAGE 1 of 168

PRODUCT SPECIFICATION

Product Name	Isopropanol 'S' Grade (2-propanol)
Alternative Names	Isopropyl Alcohol
Specification Reference	IPA/8 (23/11/IHJK)

SALES SPECIFICATION

PROPERTY	UNITS	VALUE	ASTM	ISO	OTHER
Appearance		Clear and free from suspended matter	D4176		Visual
Colour	Pt-Co	10 max	D1209	6271	
Water	Mass %	0.1 max	D1364	760	
Acidity as CH ₃ COOH	Mass %	0.001 max	D1613	2887	
Isopropanol	Mass %	99.8 min			GC
Further Properties		Typical Values			
Density	g/ml	0.784-0.787	D4052	12185	
Distillation at 101.3 kPa		82.0	D1078	918	
Initial Boiling Point	°C	83.0			
Final Boiling Point	°C	1.377			
Refractive Index N _D ²⁰		<1	D1218	5661	
Non Volatile Matter	mg/100 ml		D1353	759	

PHYSICAL PROPERTIES

PROPERTY	CONDITIONS	UNIT	VALUE
Molecular mass			60.096
Density	20°C	kg/litre (vacuo)	0.7851
Relative density	20°C/20°C		0.7863
Change in relative density	20°C	per °C	0.84x10 ⁻³
Coefficient of Cubical expansion	20°C	per °C	1.07x10 ⁻³
Litres per Tonne	20°C		1274
Melting point	1.013 bar	°C	-89.5
Boiling point	1.013 bar	°C	82.3
Change in boiling point	20°C	°C/mbar	0.025
Vapour pressure		mbar	41.6
Flammable limits			
Upper	20 °C	% volume	12.0
Lower	20 °C	% volume	2.0
Flash point	Abel closed cup	°C	12
Auto ignition temperature		°C	399
Specific heat (liquid)	20°C	kJ/kg°C	2.49
Specific heat (vapour)	20 °C	kJ/kg°C	1.75
Latent heat (of fusion)		kJ/kg	89.6
(of vaporisation)	at boiling point		670
Heat of combustion	20 °C	kJ/kg	33.37
Critical temperature		Mj/kg	234.9
Critical pressure		°C	53.6
Critical volume		bar	0.2201
Volume Resistivity	25°C	m ³ /kg mole	7.7x10 ⁴
Thermal Conductivity	20 °C	ohm.m	141
Dielectric constant	20 °C	mW/m°C	19
Refractive Index	20°C	n _D ²⁰	1.3776
Absolute viscosity	20°C	cP	2.43
Solubility	20°C	g/kg	Complete
in water	20°C	g/kg	Complete
water in solvent	21.5°C		2.93
Evaporation rate			
Relative to n-BuAc = 1			



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NOTES

Tennants ISOPROPANOL complies with the following standards:

BS 1595:1976
ASTM D770
Current European Pharmacopeia

Exclusion of Liability

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Trade Names	ISOPROPANOL
Synonyms	ISOPROPYL ALCOHOL, propan-2-ol
CAS Number	67-63-0
EINECS Number	200-661-7
REACH Registration Number	01-2119457558-25-xxxx
HMRC Tariff No.	290512000

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

Use of the Substance/Mixture	raw material for photochemicals, raw material for cleaning agents and disinfectants, process control substance, Solvent, industrial use
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1.3 Details of the supplier of the safety data sheet

Tennants Distribution Limited
Hazelbottom Road
Cheetham
Manchester
M8 0GR
Tel: 44(0)161 205 4454
Fax: 44(0) 161 203 4298
Email: msds@tennantsdistribution.com

1.4 Emergency telephone number

Tel: 44(0)844 335 0001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapour.
Eye irritation, Category 2, Eyes	H319: Causes serious eye irritation.
Specific target organ toxicity – single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard Pictogram



Signal word Danger

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

Precautionary statements

Prevention:

P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.



Response:

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.

2.3 Other hazards

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No. EINECS-No./ELINCS No.	Content [%]
propan-2-ol; isopropyl alcohol; isopropanol	67-63-0 200-661-7	

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Take off contaminated clothing and shoes immediately.
If inhaled	Move to fresh air.
In case of skin contact	Wash off with plenty of water.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Drink plenty of water. Do NOT induce vomiting. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Risks	No information available.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment	For specialist advice physicians should contact the Poisons Information Service.
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5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media	Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry powder
Unsuitable extinguishing media	High volume water jet



5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting No information available.

5.3 Advice for fire-fighters

Further information Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.
Keep away from sources of ignition – No smoking.

6.2 Environmental precautions

Environmental precautions Do no flush into surface water or sanitary sewer system.
Do not allow material to contaminate ground water system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

For personal protection see section 8.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.
Vapours are heavier than air and may spread along floors.

Advice on protection against fire and explosion Keep away from sources of ignition – No smoking.
Vapours may form explosive mixtures with air.
Do not allow to enter drains (danger of explosion).
Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep container tightly closed.
Store between 5 and 25 ° C in a dry, well ventilated place
away from sources of heat, ignition and direct sunlight.

German storage class 3 Flammable Liquids

7.3 Specific end uses

Consult the technical guidelines for the use of this Substance/mixture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	CAS Number	Value	Control Parameters	Update	Basis
Isopropanol	67-63-0	TWA	400 ppm 999 mg/m3	2007	EH40 WEL
		STEL	500 ppm	2007	EH40 WEL



			1,250 mg/m3	
<p>DNEL propan-2-ol; isopropyl alcohol; isopropanol</p>		<p>End Use: Workers Exposure routes: Skin contact Potential health effects: Chronic effects Exposure time: 1 d Value: 888 mg/kg</p> <p>End Use: Workers Exposure routes: Inhalation Potential health effects: Chronic effects Value: 500 mg/m3</p> <p>End Use: Consumers Exposure routes: Skin contact Potential health effects: Chronic effects Exposure time: 1 d Value: 319 mg/kg</p> <p>End Use: Consumers Exposure routes: Inhalation Potential health effects: Chronic effects Value: 89 mg/m3</p> <p>End Use: Consumers Exposure routes: Ingestion Potential health effects: Chronic effects Exposure time: 1 d Value: 26 mg/kg</p>		
<p>PNEC propan-2-ol; isopropyl alcohol; isopropanol</p>		<p>Fresh water Value: 140.9 mg/l</p> <p>Marine water Value: 140.9 mg/l</p> <p>Fresh water sediment Value: 552 mg/kg</p> <p>Marine sediment Value: 552 mg/kg</p> <p>Soil Value: 28 mg/kg</p>		
<p>8.2 Exposure controls</p>				
<p>Personal protective equipment Respiratory protection</p>		<p>No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use,</p>		



	or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.
Eye protection	Tightly fitting safety goggles
Hygiene measures	Take off all contaminated clothing immediately.
Protective measures	Avoid contact with skin and eyes. Do not breathe vapours or spray mist.
Environmental exposure controls	
General advice	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless
Odour	Alcohol like
pH	Not applicable
Melting point/range	-89 ° C
Boiling point/boiling range	82 ° C, 1,013 hPa
Flash point	12 ° C
Lower explosion limit	2 % (V)
Upper explosion limit	12 % (V)
Vapour pressure	42 hPa, 20 ° C 60.2 hPa, 25 ° C
Density	0.7855 g/cm ³ , 20 ° C
Water solubility	completely miscible
Partition coefficient: n-Octanol/water	log Pow: 0.05, 25 ° C, (literature value)
Autoignition temperature	> 399 ° C
Ignition temperature	425 ° C
Thermal decomposition	No decomposition if used as directed
Viscosity, dynamic	2.5 mPas, 20 ° C 2.1 mPas, 25 ° C
Explosive properties	Not explosive, No explosive

9.2 Other information



Oxidising potential	no data available
Refractive index	1.376 – 1.378, 20 ° C
10. STABILITY AND REACTIVITY	
10.1 Reactivity No data available	
10.2 Chemical stability No data available	
10.3 Possibility of hazardous reactions	
Hazardous reactions	Vapours may form explosive mixture with air.
10.4 Conditions to avoid	
Conditions to avoid	Heat, flames and sparks.
10.5 Incompatible materials	
Materials to avoid	No data available
10.6 Hazardous decomposition products	
Hazardous decomposition products	No decomposition if stored normally.
11. TOXICOLOGICAL INFORMATION	
11.1 Information on toxicological effects	
Further information	no data available
Components: propan-2-ol; isopropyl alcohol; isopropanol:	
Acute oral toxicity	LD50: > 2,000 mg/kg, rat, GLP: no, (literature value)
Acute dermal toxicity	LD50: > 2,000 mg/kg rabbit, GLP, no, (literature value)
Skin corrosion/irritation	rabbit, Result: not irritating, GLP: no, (literature value)
Serious eye damage/eye Irritation	rabbit, Result: irritating, GLP: no, (literature value)
Respiratory or skin	Buehler Test, guinea pic, Result: not sensitising, GLP: no, (literature value)
Germ cell mutagenicity	
Genotoxicity in vitro	Ames test, Salmonella typhimurium, with and without, Result: not mutagenic, GLP: no, (literature value)
12. ECOLOGICAL INFORMATION	
12.1 Toxicity Components: Propanol-2-ol; isopropyl alcohol; isopropanol:	



Toxicity to fish	LC50: > 100 mg/l, 48 h, Leuciscus idus melanotus, static GLP: no (literature value)
Toxicity to daphnia and other aquatic invertebrates	EC50: > 100 mg/l, 48 h, Daphnia magna, static test, GLP: no, (literature value)
Toxicity to algae	EC50: > 100 mg/l, 72 h, Scenedesmus subspicatus, static test, GLP: no, (literature value)
12.2 Persistence and degradability	
Components:	
propanol-2-ol; isopropyl alcohol; isopropanol:	
Biodegradability	aerobic, > 70 %, Result: Readily biodegradable., Exposure time: 10 d, content 7 mg/l, GLP: no, (literature value)
12.3 Bioaccumulative potential	
12.4 Mobility in soil	
12.5 Results of PBT and vPvB assessment	
Components	
propan-2-ol; isopropyl alcohol; isopropanol:	
Assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
12.6 Other adverse effects	
Product:	
Additional ecological	No data available information
13. DISPOSAL CONSIDERATIONS	
13.1 Waste treatment methods	
Product	Following pre-treatment and observing the regulations for hazardous wastes, it must be taken to a permitted hazardous wastes landfill or hazardous wastes incinerator.
Contaminated packaging	Can be used after re-conditioning.
14. TRANSPORT INFORMATION	
14.1 UN Number	
ADR	1219
RID	1219
IMDG	1219
IATA	1219
14.2 Proper Shipping Name	
ADR	ISOPROPYL ALCOHOL, ISOPROPANOL
RID	ISOPROPYL ALCOHOL, ISOPROPANOL
IMDG	ISOPROPYL ALCOHOL, ISOPROPANOL
IATA	ISOPROPANOL



ENCS	On the inventory, or in compliance with the inventory
KOREA	On the inventory, or in compliance with the inventory
PHIL	On the inventory, or in compliance with the inventory
CHINA	On the inventory, or in compliance with the inventory
ISHL	On the inventory, or in compliance with the inventory
NZIOC	On the inventory, or in compliance with the inventory

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H3326	May cause drowsiness or dizziness.

Reason for issue: Specification updated.

Revision Date: 24/11/2023

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