

SAFETY DATA SHEET

Revision: 1.0 Date: 11 July 2017



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

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

- 1.1 Product identifier**
Product Name IPA
Chemical Name Propan-2-ol
CAS Number 67-63-0
EC Number 200-661-7
REACH Registration No. 01-2119457558-25-XXXX
IUPAC 2 propanol
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified Use(s) Solvent
Uses Advised Against None known.
- 1.3 Details of the supplier of the safety data sheet**
Company Identification VISHAY MEASUREMENTS GROUP GmbH
Tatschenweg 1
74078 Heilbronn
Germany
Telephone +49 (0) 7131-39099-0
Fax +49 (0) 7131-39099-229
Website www.micro-measurements.com
E-mail mm.de@vpgsensors.com
E-Mail (competent person) sdb@vpgsensors.com
- 1.4 Emergency telephone number**
Emergency Phone No. +49 (0) 89-19240 (24 hours)
Languages spoken English

SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
- 2.1.1 Regulation (EC) No. 1272/2008 (CLP)**
Flam. Liq. 2; H225
Eye Irrit. 2; H319
STOT SE 3; H336
- 2.2 Label elements**
Product Name IPA
- Hazard Pictogram(s)
- 
- Signal Word(s) DANGER
- Hazard Statement(s)
H225: Highly flammable liquid and vapour.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
- Precautionary Statement(s)
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264: Wash hands and exposed skin thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated

SAFETY DATA SHEET

Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

clothing. Rinse skin with water/shower.
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.

Supplemental information

Not applicable

2.3 Other hazards

Can form explosive mixture with air.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.
Propan-2-ol	>99	7664-38-2	200-661-7	01-2119457558-25-XXXX

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin and eyes. Contaminated clothing should be laundered before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Wash contaminated clothing before reuse. If irritation (redness, rash, blistering) develops, get medical attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

IF SWALLOWED: Rinse mouth. Make victim drink plenty of water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless instructed to do so by medical personnel. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation. May cause drowsiness or dizziness. In cases of severe exposure, dermatitis may develop.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician:

Unlikely to be required but if necessary treat symptomatically.

IF SWALLOWED: Material may be aspirated into the lungs and cause chemical pneumonitis

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Unsuitable extinguishing Media

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.

SAFETY DATA SHEET

Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

5.3 Advice for fire-fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Caution - spillages may be slippery. Ensure operatives are trained to minimise exposures. Ensure suitable personal protection during removal of spillages. Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use personal protective equipment as required. See Section: 8. Do not breathe vapour.

6.2 Environmental precautions

Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Provided it is safe to do so, isolate the source of the leak. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Dispose of this material and its container as hazardous waste. Allow small spillages to evaporate provided there is adequate ventilation.

6.4 Reference to other sections

See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Do not breathe vapour. In case of inadequate ventilation wear respiratory protection. Avoid contact with skin and eyes. Do not ingest. Wear protective gloves/eye protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. May form explosive mixture with air particularly in enclosed spaces. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Ground/bond container and receiving equipment. Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. May form explosive mixture with air particularly in enclosed spaces. Keep away from direct sunlight.

Storage temperature
Storage life
Incompatible materials

Ambient temperatures.
Stable under normal conditions.
Strong oxidising agents, Strong acids and alkali., Aldehydes, Halogens
See Section: 1.2.

7.3 Specific end use(s)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Propan-2-ol	67-63-0	400	999	500	1250	WEL

Source: WEL: Workplace Exposure Limit (UK HSE EH40),

8.1.2 Biological limit value

Not established

Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

8.1.3 PNECs and DNELs

Propan-2-ol Derived No Effect Level	Oral	Inhalation	Dermal
Worker - Long Term - Systemic effects	-	500 mg/m ³	888 mg/kg bw/day
Consumer - Long Term - Systemic effects	26 mg/kg bw/day	89 mg/m ³	319 mg/kg bw/day

Propan-2-ol Predicted No Effect Concentration	Value
Aquatic Compartment	PNEC Aqua (marine water) 140.9 mg/l PNEC Aqua (freshwater) 140.9 mg/l PNEC freshwater sediment 552 mg/kg dw PNEC marine sediment 552 mg/kg dw
Soil	PNEC 28 Soil mg/kg dw
STP (Sewage Treatment Plant)	PNEC STP 2251 mg/l
Hazard for predators (Secondary Poisoning)	PNEC Oral 160 mg/kg food

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Avoid contact with skin and eyes. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place. IF exposed: Flush with fresh water if contact with skin or eyes.

Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection (EN166).

Skin protection

**Hand protection:**

Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Suitable materials for prolonged exposure: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374.

Butyl rubber (Minimum thickness: 0.5mm), Nitrile rubber (Minimum thickness: 0.35mm)

Suitable materials for splash protection: At least protective index 5, corresponding > 240 minutes of permeation time according to EN 374. Polychloroprene - CR (Minimum thickness: 0.5mm).

Unsuitable gloves materials: Natural rubber, Polyvinyl chloride - PVC

Body protection:

Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A suitable mask with filter type A (EN141 or EN405) may be appropriate.

Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

Thermal hazards Not applicable

8.2.3 Environmental Exposure Controls Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colourless liquid
Odour	Alcohol odour.
Odour threshold	1.0 – 196.1 ppm
pH	Not established
Melting point/freezing point	-88.5°C
Initial boiling point and boiling range	82.5°C
Flash point	11.7 °C [Closed cup]
Evaporation rate	Not established
Flammability (solid, gas)	Not applicable - liquid mixture
Upper/lower flammability or explosive limits	LEL: 2% UEL: 13%
Vapour pressure	44hPa @ 20°C
Vapour density	Not established
Relative density	0.8 g/cm ³ (H ₂ O = 1)
Solubility(ies)	Miscible with water.
Partition coefficient: n-octanol/water	0.05 log Pow (25 °C)
Auto-ignition temperature	455.6 °C
Decomposition Temperature	Not available.
Viscosity	2.038 mPa s (Dynamic viscosity) 25 °C
Explosive properties	Not available.
Oxidising properties	Not oxidising.

9.2 Other information None known

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. May form explosive mixture with air particularly in enclosed spaces.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Strong oxidising agents, Strong acids and alkali., Aldehydes, Halogens
10.6 Hazardous decomposition product(s)	Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. LD50 (oral,rat) mg/kg: 58400 (OECD 401)
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. LC50 (inhalation,rat) mg/l/4h: 10000 (OECD 403)
Acute toxicity - Skin Contact	Based upon the available data, the classification criteria are not met. LD50 (Dermal, (rabbit)) ml/kg bw 16.4 (OECD 402)
Skin corrosion/irritation	Based upon the available data, the classification criteria are not met. Not irritating to skin. (rabbit) (Nixon G et al, 1975)
Serious eye damage/irritation	Eye Irrit. 3; Causes serious eye irritation. Irritating to eyes. (rabbit) (OECD 405)
Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met. Skin Sensitisation (guinea pig) - Negative (OECD 406)
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met. In vitro: Negative (OECD 476)

SAFETY DATA SHEET

Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

Carcinogenicity	In vivo: Negative (OECD 474) Based upon the available data, the classification criteria are not met. NOAEL 5000 ppm (rat) (OECD 451)
Reproductive toxicity	Based upon the available data, the classification criteria are not met. Reproductive toxicity: NOAEL 10000 mg/l No effects observed at highest dose (OECD 416)
STOT - single exposure	Developmental toxicity: NOAEC 400ppm (OECD 414) STOT SE 3; May cause drowsiness or dizziness. Central nervous depression. (OECD 403)
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2 Other information	None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Based upon the available data, the classification criteria are not met. LC50 (fish) mg/l 10000 (OECD 203)
12.2 Persistence and degradability	Readily biodegradable.
12.3 Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4 Mobility in soil	The product has high mobility in soil. Propan-2-ol: Miscible with water.
12.5 Results of PBT and VPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Dispose of this material and its container as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA/ICAO
14.1 UN number	UN 1219	UN 1219	UN 1219
14.2 UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)	ISOPROPANOL (ISOPROPYL ALCOHOL)	ISOPROPANOL (ISOPROPYL ALCOHOL)
14.3 Transport hazard class(es)	3	3	3
14.4 Packing group	II	II	II
14.5 Environmental hazards	Not classified	Not classified as a Marine Pollutant.	Not classified
14.6 Special precautions for user	See Section: 2		
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable		

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1 EU regulations	Authorisations and/or Restrictions On Use
15.1.2 National regulations	Not restricted
15.2 Chemical Safety Assessment	None known
	A REACH chemical safety assessment is not yet available for this substance.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New format has been issued, all sections have been updated to include new information. Review SDS with care.

SAFETY DATA SHEET



Revision: 1.0 Date: 11 July 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

www.vishaypg.com

References: Existing Safety Data Sheet (SDS), Harmonised Classification and Existing ECHA registration(s) for Propan-2-ol (CAS No. 67-63-0).

Literature References:

1. Nixon G, Tyson C & Wertz W, 1975, Interspecies Comparisons of Skin Irritancy, Toxicology and Applied Pharmacology 31, 481-490 (1975)

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830.

LEGEND

LTEL: Long Term Exposure Limit

DNEL: Derived No Effect Level

PBT: PBT: Persistent, Bioaccumulative and Toxic

NOAEL: No Observed Adverse Effect Level

STEL: Short Term Exposure Limit

PNEC: Predicted No Effect Concentration

vPvB: very Persistent and very Bioaccumulative

NOAEC: no observed adverse effect concentration

Hazard classification / Classification code:

Flam. Liq. 2; Flammable Liquid, Category 2

Eye Irrit. 2; Eye Irritation, Category 2

STOT SE 3; Specific target organ toxicity — single exposure, Category 3

Hazard Statement(s)

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

EUH066: Repeated exposure may cause skin dryness or cracking.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Vishay Precision Group gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Vishay Precision Group accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.



Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "VPG"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify VPG's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

VPG makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, VPG disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on VPG's knowledge of typical requirements that are often placed on VPG products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. You should ensure you have the current version of the relevant information by contacting VPG prior to performing installation or use of the product, such as on our website at vpgsensors.com.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of VPG.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling VPG products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify VPG for any damages arising or resulting from such use or sale. Please contact authorized VPG personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Copyright Vishay Precision Group, Inc., 2014. All rights reserved.