SECTION 1. Identification

Product identifier

Product number PX1838
Product name iso-Propyl Alcohol HPLC Grade <br/>[2-Propanol]
Synonyms IPA, iPrOH
CAS-No. 67-63-0

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Eye irritation, Category 2, H319
Specific target organ systemic toxicity - single exposure, Category 3, Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word
Danger

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

Precautionary Statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403 + P235 Store in a well-ventilated place. Keep cool.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula \( \text{CH}_3\text{CH(OH)CH}_3 \) \( \text{C}_3\text{H}_8\text{O} \) (Hill)
Synonyms IPA, iPrOH
Molar mass 60.1 g/mol

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
2-Propanol (>= 90 % - <= 100 % )
67-63-0
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Consult doctor if feeling unwell.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, respiratory paralysis, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Headache, drowsiness, Coma
Drying-out effect resulting in rough and chapped skin.

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

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.
Cool closed containers exposed to fire with water spray.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact.
Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.
**SAFETY DATA SHEET**

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

**Advice on protection against fire and explosion**
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at room temperature.

---

**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol 67-63-0</td>
<td>ACGIH Time Weighted Average (TWA):</td>
<td>200 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>400 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH/GUIDE Recommended exposure limit (REL):</td>
<td>400 ppm</td>
<td>980 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>500 ppm</td>
<td>1,225 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA_TRANS PEL:</td>
<td>400 ppm</td>
<td>980 mg/m³</td>
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<td></td>
<td>Z1A Short Term Exposure Limit (STEL):</td>
<td>500 ppm</td>
<td>1,225 mg/m³</td>
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</tr>
<tr>
<td></td>
<td>Time Weighted Average (TWA):</td>
<td>400 ppm</td>
<td>980 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

**Hygiene measures**

Change contaminated clothing. Application of skin-protective barrier cream recommended. Wash hands after working with substance.

**Eye/face protection**

Safety glasses

**Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Other protective equipment:
Flame retardant antistatic protective clothing

Respiratory protection
required when vapors/aerosols are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
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<tr>
<td>Odor</td>
<td>alcohol-like</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>1.0 - 196.1 ppm</td>
</tr>
<tr>
<td>pH</td>
<td>at 68 °F (20 °C) neutral</td>
</tr>
<tr>
<td>Melting point</td>
<td>-89.5 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>180.3 °F (82.4 °C) at 1,013 hPa</td>
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<tr>
<td>Flash point</td>
<td>54 °F (12 °C) Method: c.c.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>13.4 %(V)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>43 hPa</td>
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<tr>
<td></td>
<td>at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>2.07</td>
</tr>
<tr>
<td>Density</td>
<td>0.786 g/cm³</td>
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<tr>
<td></td>
<td>at 68 °F (20 °C)</td>
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<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
</tbody>
</table>
Partition coefficient: n-octanol/water  
log Pow:  0.05  
OECD Test Guideline 107  
Bioaccumulation is not expected.

Autoignition temperature  
No information available.

Decomposition temperature  
Distillable in an undecomposed state at normal pressure.

Viscosity, dynamic  
2.2 mPa.s  
at 68 °F (20 °C)

Explosive properties  
Not classified as explosive.

Oxidizing properties  
none

Ignition temperature  
797 °F (425 °C)  
Method: DIN 51794

Minimum ignition energy  
0.65 mJ

Conductivity  
< 0.1 µS/cm

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapors with:
Alkali metals, Alkaline earth metals, Aluminum
Exothermic reaction with:
Oxidizing agents, Nitric acid, Aldehydes, Amines, fuming sulfuric acid, Iron
Risk of explosion with:
chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides

Conditions to avoid

Warming.

Incompatible materials
rubber, various plastics, oils

Hazardous decomposition products
no information available
SECTION 11. Toxicological information

**Information on toxicological effects**

**Likely route of exposure**
Inhalation, Eye contact, Skin contact

**Target Organs**
Eyes
Skin
Respiratory system

**Acute oral toxicity**
LDLO human: 3,570 mg/kg (RTECS)

LD50 rat: 5,045 mg/kg (RTECS)

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

**Acute inhalation toxicity**
LC50 rat: 46.5 mg/l; 4 h (External MSDS)

Symptoms: Irritation symptoms in the respiratory tract.

**Acute dermal toxicity**
LD50 rabbit: 12,800 mg/kg (RTECS)

**Skin irritation**
Drying-out effect resulting in rough and chapped skin.

**Eye irritation**
rabbit
Result: Eye irritation (RTECS)
Causes serious eye irritation.

**Sensitization**
Sensitization test: guinea pig
Result: negative (IUCLID)

**Genotoxicity in vivo**
Mutagenicity (mammal cell test): micronucleus.
Result: negative (IUCLID)

**Genotoxicity in vitro**
Ames test
Result: negative (IUCLID)

**Carcinogenicity**
Did not show carcinogenic effects in animal experiments. (IUCLID)
Reproductive toxicity
No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity
Did not show teratogenic effects in animal experiments. (IUCLID)

Specific target organ systemic toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity
IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
Systemic effects:
After absorption:
Headache, Dizziness, inebriation, Unconsciousness, narcosis
After uptake of large quantities:
respiratory paralysis, Coma
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity
Toxicity to fish
LC50 Lepomis macrochirus (Bluegill sunfish): 1,400 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: 4,930 mg/l; 72 h (maximum permissible toxic concentration) (Lit.)

EC50 Daphnia magna (Water flea): 13,299 mg/l; 48 h (IUCLID)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h (IUCLID)

Toxicity to bacteria
EC5 Pseudomonas putida: 1,050 mg/l; 16 h (Lit.)
Persistence and degradability

Biodegradability
95 %; 21 d
OECD Test Guideline 301E
Readily biodegradable.

Theoretical oxygen demand (ThOD)
2,400 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5  49 %
(IUCLID)

Ratio COD/ThBOD
96 %
(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow:  0.05
OECD Test Guideline 107
Bioaccumulation is not expected.

Mobility in soil
No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number  UN 1219
Proper shipping name  ISOPROPANOL
Class  3
Packing group  II
Environmentally hazardous  --

Air transport (IATA)

UN number  UN 1219
Proper shipping name  ISOPROPANOL
Class  3
Packing group  II
Environmentally hazardous  --
Special precautions for user

Sea transport (IMDG)

UN number
Proper shipping name
Class
Packing group
Environmentally hazardous
Special precautions for user
EmS

SECTION 15. Regulatory information

United States of America

OSHA Hazards
Flammable Liquid
Eye irritant
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards
Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients
2-Propanol 67-63-0 100 %

SARA 302
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Ingredients
2-Propanol

Pennsylvania Right To Know

Ingredients
2-Propanol

New Jersey Right To Know

Ingredients
2-Propanol

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

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

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

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue: 04/28/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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