SAFETY DATA SHEET

1. Identification

Product identifier: Isopropyl Alcohol

Other means of identification
Synonyms: 2-Propanol, Dimethyl carbinol, sec-Propyl alcohol
Product No.: 0562, 3031, 3032, 3043, 3590, 3591, 3593, 8288, 9037, 9080, H604, U298, V555, V566

Recommended restrictions
Recommended use: For Laboratory, Research or Manufacturing Use.
Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Company Name: Avantor Performance Materials, LLC
Address: 100 Matsonford Rd, Suite 200
Radnor, PA 19087
Telephone: Customer Service: 855-282-6867
Contact Person: Product Information Compliance
E-mail: info@avantormaterials.com

Emergency telephone number:
CHEMTREC: 1-800-424-9300 within US and Canada

2. Hazard(s) identification

Hazard Classification

Physical Hazards
Flammable liquids Category 2

Health Hazards
Serious Eye Damage/Eye Irritation Category 2A
Specific Target Organ Toxicity - Single Exposure Category 3.1

Target Organs
1. Narcotic effect.

Label Elements

Hazard Symbol:
**Signal Word:** Danger

**Hazard Statement:**
- Highly flammable liquid and vapor.
- Causes serious eye irritation.
- May cause drowsiness or dizziness.

**Precautionary Statements**

**Prevention:**

**Response:**
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction.

**Storage:**
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

**Disposal:**
Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):** None.

### 3. Composition/information on ingredients

**Substances**

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS number</th>
<th>Content in percent (%)&lt;sup&gt;*&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>98 - 100%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:**
Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:**
Move to fresh air. Get medical attention if symptoms persist.

**Skin Contact:**
Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.
Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Symptoms may be delayed. Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away.

Methods and material for containment and cleaning up:

In case of leakage, eliminate all ignition sources. Use non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures:

Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure controls/personal protection

Control Parameters

### Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>TWA</td>
<td>200 ppm</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>400 ppm</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>REL</td>
<td>480 ppm 980 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>500 ppm 1,225 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>400 ppm 980 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>500 ppm 1,225 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>400 ppm 980 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
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<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
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<td>400 ppm 980 mg/m³</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>2,000 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>200 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>4,920 µg/m³</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>492 µg/m³</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>500 ppm 1,225 mg/m³</td>
<td>US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)</td>
</tr>
<tr>
<td></td>
<td>TWA PEL</td>
<td>400 ppm 980 mg/m³</td>
<td>US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)</td>
</tr>
</tbody>
</table>
### Biological Limit Values

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol (acetone: Sampling time: End of shift at end of work week.)</td>
<td>40 mg/l (Urine)</td>
<td>ACGIH BEI (03 2013)</td>
</tr>
</tbody>
</table>

### Appropriate Engineering Controls

No data available.

### Individual Protection Measures, such as Personal Protective Equipment

#### General Information:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

#### Eye/face protection:
Wear safety glasses with side shields (or goggles).

#### Skin Protection

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing and gloves.

#### Respiratory Protection:
In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge.

#### Hygiene Measures:
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

### 9. Physical and Chemical Properties

#### Appearance
- **Physical state:** Liquid
- **Form:** Liquid
- **Color:** Colorless
- **Odor:** Alcohol
- **Odor threshold:** No data available.
- **pH:** No data available.
- **Melting point/freezing point:** -88.5 °C
- **Initial boiling point and boiling range:** 82.5 °C (101.3 kPa)
- **Flash Point:** 12 °C (Closed Cup)
- **Evaporation rate:** 21 ether= 1.7 n-butyl acetate=1
- **Flammability (solid, gas):** Class IB Flammable Liquid

#### Upper/lower limit on flammability or explosive limits
- **Flammability limit - upper (%):** 12 % (V)
- **Flammability limit - lower (%):** 2.5 % (V)
- **Explosive limit - upper (%):** No data available.
- **Explosive limit - lower (%):** No data available.
- **Vapor pressure:** 6.053 kPa (25 °C) 44 hPa (20 °C)
Vapor density: 2.1 (Air=1)
Density: 0.79 g/ml (20 °C)
Relative density: 0.79 (20 °C)
Solubility(ies)
   Solubility in water: Miscible with water.
   Solubility (other): benzene: Soluble
                     chloroform: Miscible
Partition coefficient (n-octanol/water): 0.05
Auto-ignition temperature: 399 °C
Decomposition temperature: No data available.
Viscosity: No data available.

Other information
   Liquid conductivity: 35 µS/cm (25 °C)
   Minimum ignition energy: 0.65 mJ
   Molecular weight: 60.1 g/mol (C3H8O)

10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Material is stable under normal conditions.
Possibility of hazardous reactions: Hazardous polymerization does not occur.
Conditions to avoid: Heat, sparks, flames. Sunlight.
Hazardous Decomposition Products: Thermal decomposition may release oxides of carbon.

11. Toxicological information

Information on likely routes of exposure
   Inhalation: May cause irritation to the mucous membranes and upper respiratory tract.
               May cause central nervous system effects.
   Skin Contact: Causes mild skin irritation.
   Eye contact: Causes serious eye irritation.
   Ingestion: Irritating. May cause nausea, stomach pain and vomiting.

Information on toxicological effects

   Acute toxicity (list all possible routes of exposure)
   Oral Product: LD 50 (Rat): 5,045 - 5,840 mg/kg
   Dermal Product: LD 50 (Rabbit) 12,800 mg/kg
   Inhalation Product: LC 50 (Rat, 6 h) > 10000 ppm
LOAEL (Rat, 6 h): 5000 ppm

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Prolonged or repeated skin contact may cause drying, cracking, or irritation.

Serious Eye Damage/Eye Irritation
Product: Irritating to eyes.

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: Central nervous system. - Narcotic effect.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Target Organs
Specific Target Organ Toxicity - Single Exposure: Narcotic effect.

Aspiration Hazard
Product: May be harmful if swallowed and enters airways.

Other effects: None known.
12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

**Fish**
Product: LC 50 (Western mosquitofish (Gambusia affinis), 96 h): > 1,400 mg/l

**Aquatic Invertebrates**
Product: LC 50 (Water flea (Daphnia magna), 24 h): 10,000 mg/l

Chronic hazards to the aquatic environment:

**Fish**
Product: No data available.

**Aquatic Invertebrates**
Product: No data available.

**Toxicity to Aquatic Plants**
Product: No data available.

Persistence and Degradability

**Biodegradation**
Product: Expected to be readily biodegradable.

**BOD/COD Ratio**
Product: No data available.

**Bioaccumulative potential**
**Bioconcentration Factor (BCF)**
Product: No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**
Product: Log Kow: 0.05

**Mobility in soil:**
The product is partly soluble in water. May spread in the aquatic environment.

**Other adverse effects:**
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

**Disposal instructions:**
Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.

**Contaminated Packaging:**
Since emptied containers retain product residue, follow label warnings even after container is emptied.
14. Transport information

**DOT**
- **UN Number:** UN 1219
- **UN Proper Shipping Name:** Isopropanol
- **Transport Hazard Class(es):**
  - **Class:** 3
  - **Label(s):** 3
- **Packing Group:** II
- **Marine Pollutant:** No
- **Special Precautions for User:** Not determined.

**IMDG**
- **UN Number:** UN 1219
- **UN Proper Shipping Name:** ISOPROPANOL
- **Transport Hazard Class(es):**
  - **Class:** 3
  - **Label(s):** 3
  - **EmS No.:** F-E, S-D
- **Packing Group:** II
- **Marine Pollutant:** No
- **Special Precautions for User:** Not determined.

**IATA**
- **UN Number:** UN 1219
- **Proper Shipping Name:** Isopropanol
- **Transport Hazard Class(es):**
  - **Class:** 3
  - **Label(s):** 3
- **Packing Group:** II
- **Marine Pollutant:** No
- **Special Precautions for User:** Not determined.

15. Regulatory information

**US Federal Regulations**
- **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** None present or none present in regulated quantities.
- **US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):** None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>100 lbs.</td>
</tr>
</tbody>
</table>

**Superfund Amendments and Reauthorization Act of 1986 (SARA):**

**Hazard categories**
- **Acute (Immediate):**
- **Fire:**

**SARA 302 Extremely Hazardous Substance**
- **None present or none present in regulated quantities.**

**SARA 304 Emergency Release Notification**

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>100 lbs.</td>
</tr>
</tbody>
</table>
SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>10000 lbs.</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reporting threshold for other users</th>
<th>Reporting threshold for manufacturing and processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>10000 lbs.</td>
<td>25000 lbs.</td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Isopropyl alcohol

US. Massachusetts RTK - Substance List

Chemical Identity
Isopropyl alcohol

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Isopropyl alcohol

US. Rhode Island RTK

Chemical Identity
Isopropyl alcohol

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable
Inventory Status:
- Australia AICS: On or in compliance with the inventory
- Canada DSL Inventory List: On or in compliance with the inventory
- EINECS, ELINCS or NLP: On or in compliance with the inventory
- Japan (ENCS) List: On or in compliance with the inventory
- China Inv. Existing Chemical Substances: Not in compliance with the inventory.
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- Philippines PICCS: On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Japan ISHL Listing: On or in compliance with the inventory
- Mexico INSQ: On or in compliance with the inventory
- Taiwan Chemical Substance Inventory: On or in compliance with the inventory

16. Other information, including date of preparation or last revision

NFPA Hazard ID

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 11-29-2018
Revision Information: Not relevant.
Version #: 1.2
Source of information: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer’s SDSs and other sources, as appropriate.

Further Information: No data available.
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