SAFETY DATA SHEET

1. Identification

Product identifier Isopropyl Alcohol 99%
Other means of identification
  CAS number 67-63-0
  Synonyms IPA, Isopropyl Alcohol, Isopropanol.
Recommended use General purpose solvent.
Recommended restrictions Use in accordance with manufacturer's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company Name Avantik
Address 19 Chapin Rd. - Unit C
Pine Brook, NJ 07058
USA
Telephone 800.783.9424
Fax 973.232.0076

Emergency phone number
  USA CHEMTREC: 1.800.424.9300 (CCN 17213)
  International CHEMTREC: +1.703.527.3887 (CCN 17213)

2. Hazard(s) identification

Physical hazards Flammable liquids Category 2
Health hazards Serious eye damage/eye irritation Category 2A
Specific target organ toxicity, single exposure Category 3 narcotic effects
OSHA defined hazards Not classified.

Label elements

Signal word Danger
Hazard statement Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.
Precautionary statement
Response

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. 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. In case of fire: Use appropriate media to extinguish.

Storage

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

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

None.

3. Composition/information on ingredients

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td></td>
<td>67-63-0</td>
<td>100</td>
</tr>
</tbody>
</table>

Composition comments

All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors/spray. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol (CAS 67-63-0)</td>
<td>PEL 980 mg/m3</td>
<td>400 ppm</td>
</tr>
<tr>
<td>US. ACGIH Threshold Limit Values</td>
<td>STEL 400 ppm</td>
<td>TWA 200 ppm</td>
</tr>
<tr>
<td>Isopropyl alcohol (CAS 67-63-0)</td>
<td>STEL 1225 mg/m3</td>
<td>TWA 980 mg/m3</td>
</tr>
<tr>
<td>US. NIOSH: Pocket Guide to Chemical Hazards</td>
<td>STEL 500 ppm</td>
<td>TWA 400 ppm</td>
</tr>
</tbody>
</table>

Biological limit values

<table>
<thead>
<tr>
<th>Material</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol (CAS 67-63-0)</td>
<td>40 mg/l</td>
<td>Acetone</td>
<td>Urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

Appropriate engineering controls

Good general ventilation 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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical goggles are recommended.
Skin protection

Hand protection: Nitrile, butyl rubber or neoprene gloves are recommended. Other suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other: Wear appropriate chemical resistant clothing.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge.

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations: When using do not smoke. 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.

9. Physical and chemical properties

Appearance

- Physical state: Liquid.
- Form: Liquid.
- Color: Colorless.
- Odor: Alcohol-like.
- Odor threshold: Not available.
- pH: Not available.
- Melting point/freezing point: -129.1 °F (-89.5 °C)
- Initial boiling point and boiling range: 181.4 °F (83 °C)
- Flash point: 53.6 °F (12.0 °C) Closed Cup
- Evaporation rate: 3
- Flammability (solid, gas): Not applicable.
- Upper/lower flammability or explosive limits:
  - Flammability limit - lower (%): 2 % v/v
  - Flammability limit - upper (%): 12.7 % v/v
- Vapor pressure: 43.2 hPa (68 °F (20 °C))
- Vapor density: 2.1
- Relative density: 0.785 g/cm3 (77 °F (25 °C))
- Solubility(ies):
  - Solubility (water): completely soluble
- Partition coefficient (n-octanol/water): 0.05
- Auto-ignition temperature: 750.2 °F (399 °C)
- Decomposition temperature: Not available.
- Viscosity: Not available.

Other information

- Explosive properties: Not explosive.
- Heat of combustion (NFPA 30B): 27.4 kJ/g
- Molecular formula: C3-H8-O
- Molecular weight: 60.1 g/mol
- Oxidizing properties: Not oxidizing.

10. Stability and reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability: Material is stable under normal conditions. Hygroscopic.
Hazardous polymerization does not occur.

Possibility of hazardous reactions

Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Avoid direct light. Contact with incompatible materials.

Incompatible materials

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation
May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.

Skin contact
Repeated exposure may cause skin dryness or cracking.

Eye contact
Causes serious eye irritation.

Ingestion
May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics
May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol (CAS 67-63-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td>12870 mg/kg</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor</td>
<td>Rat</td>
<td>72.6 mg/l, 4 Hours</td>
</tr>
<tr>
<td>LC50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>4710 mg/kg</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td></td>
<td>Repeated exposure may cause skin dryness or cracking.</td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td></td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitization</strong></td>
<td></td>
<td>Not a respiratory sensitizer.</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
<td></td>
<td>This product is not expected to cause skin sensitization.</td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td></td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td></td>
<td>Not classifiable as to carcinogenicity to humans.</td>
</tr>
<tr>
<td>IARC Monographs. Overall Evaluation of Carcinogenicity</td>
<td></td>
<td>Not listed.</td>
</tr>
<tr>
<td>NTP Report on Carcinogens</td>
<td></td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

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

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful.
12. Ecological information

Ecotoxicity

The product is 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol (CAS 67-63-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>LC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Pimephales promelas</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>NOEC</td>
<td></td>
<td>Daphnia magna</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 mg/l, 21 days</td>
</tr>
</tbody>
</table>

Persistence and degradability

No data is available on the degradability of this substance.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

0.05

Mobility in soil

Expected to be mobile in soil.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number                       UN1219
UN proper shipping name         Isopropanol
Transport hazard class(es)      
Class                           3
Subsidiary risk                 -
Label(s)                        3
Packing group                   II
Environmental hazards           No
Marine pollutant                
Special precautions for user    Read safety instructions, SDS and emergency procedures before handling.
Special provisions              IB2, T4, TP1
Packaging exceptions            4b, 150
Packaging non bulk              202
Packaging bulk                  242

IATA

UN number                       UN1219
UN proper shipping name         Isopropanol
Transport hazard class(es)      
Class                           3
Subsidiary risk: -
Packing group: II
Environmental hazards: No
ERG Code: 3L
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

IMDG
- UN number: UN1219
- UN proper shipping name: ISOPROPAANOL
- Transport hazard class(es): Class 3, Subsidiary risk: -
- Packing group: II
- Environmental hazards: Marine pollutant: No
- EmS: F-E, S-D
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not established.

15. Regulatory information
- US federal regulations
  - This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
  - TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
    - Not regulated.
  - CERCLA Hazardous Substance List (40 CFR 302.4)
    - Isopropyl alcohol (CAS 67-63-0) Listed.
  - SARA 304 Emergency release notification:
    - Not regulated.
    - Not regulated.

- Superfund Amendments and Reauthorization Act of 1986 (SARA)
  - SARA 302 Extremely hazardous substance
    - Not listed.
  - SARA 311/312 Hazardous chemical: Yes
    - Classified hazard categories
      - Flammable (gases, aerosols, liquids, or solids)
      - Serious eye damage or eye irritation
      - Specific target organ toxicity (single or repeated exposure)

- SARA 313 (TRI reporting)
  - Chemical name: Isopropyl alcohol
  - CAS number: 67-63-0
  - % by wt.: 100

- Other federal regulations
  - Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
    - Not regulated.
  - Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
    - Not regulated.
  - Safe Drinking Water Act (SDWA)
    - FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace
      - Isopropyl alcohol (CAS 67-63-0) Low priority

- US state regulations
  - US. Massachusetts RTK - Substance List
    - Isopropyl alcohol (CAS 67-63-0)
  - US. New Jersey Worker and Community Right-to-Know Act
    - Isopropyl alcohol (CAS 67-63-0)
US. Pennsylvania Worker and Community Right-to-Know Law
Isopropyl alcohol (CAS 67-63-0)

US. Rhode Island RTK
Isopropyl alcohol (CAS 67-63-0)

California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
Isopropyl alcohol (CAS 67-63-0)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (EILNCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date: 11-June-2018
Revision date: -
Version #: 01
HMIS® ratings
- Health: 2
- Flammability: 3
- Physical hazard: 0

Disclaimer
This product is subject to Avantik’s terms and conditions. Avantik cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.