1. PRODUCT AND COMPANY IDENTIFICATION

Product Name  Isopropyl alcohol, 70% in water
Cat No.  A459-1; A459-4; A459-20; A459-500
Synonyms  IPA; Isopropanol (70% aqueous solution)
Recommended Use  Laboratory chemicals

Company  Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number  CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!
Emergency Overview
Flammable liquid and vapor. Irritating to eyes and skin. May cause central nervous system effects. May cause irritation of respiratory tract. Aspiration hazard if swallowed - can enter lungs and cause damage.

Appearance  Colorless
Physical State  Liquid
odor  Alcohol-like

Target Organs  Eyes, Skin, Central nervous system (CNS), Kidney, Liver

Potential Health Effects

Acute Effects

<table>
<thead>
<tr>
<th>Principle Routes of Exposure</th>
<th>Potential Health Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Skin</td>
<td>Irritating to skin. May be harmful in contact with skin. Repeated exposure may cause skin dryness or cracking.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract. May be harmful if inhaled. Inhalation may cause central nervous system effects.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed. Aspiration hazard. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

Chronic Effects  Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.
See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions**
- Preexisting eye disorders.
- Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>64.7</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>35.3</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**
Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

**Ingestion**
Do not induce vomiting. Obtain medical attention.

**Notes to Physician**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point**
- 18°C / 64.4°F

**Autoignition Temperature**
- 399°C / 750.2°F

**Explosion Limits**
- Upper: 12.7 vol %
- Lower: 2.0 vol %

**Suitable Extinguishing Media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable Extinguishing Media**
- No information available.

**Hazardous Combustion Products**
- No information available.

**Sensitivity to mechanical impact**
- No information available.

**Sensitivity to static discharge**
- No information available.

**Specific Hazards Arising from the Chemical**
Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIGHT (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

- Health 1
- Flammability 3
- Instability 0
- Physical hazards N/A

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**
Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions**
Should not be released into the environment.

**Methods for Containment and Clean Up**
Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable and closed containers for disposal.

### 7. HANDLING AND STORAGE

**Handling**
Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

**Storage**
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Measures**
Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>TWA: 200 ppm</td>
<td>(Vacated) TWA: 980 mg/m³</td>
<td>IDLH: 2000 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 400 ppm</td>
<td>(Vacated) TWA: 400 ppm</td>
<td>TWA: 980 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 1225 mg/m³</td>
<td>TWA: 400 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 500 ppm</td>
<td>STEL: 500 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 400 ppm</td>
<td>STEL: 1225 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 980 mg/m³</td>
<td>TWA: 200 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>TWA: 400 ppm</td>
<td>TWA: 400 ppm</td>
<td>TWA: 200 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA: 985 mg/m³</td>
<td>TWA: 980 mg/m³</td>
<td>STEL: 400 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 500 ppm</td>
<td>STEL: 1225 mg/m³</td>
<td>STEL: 500 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 1230 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>odor</td>
<td>Alcohol-like</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>33 mmHg @ 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.1 (Air = 1.0)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>82°C / 179.6°F</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-88°C / -126.4°F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>18°C / 64.4°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>1.7 (Butyl Acetate = 1.0)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.7850</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible with water</td>
</tr>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Incompatible products. Heat, flames and sparks.

Incompatible Materials
Strong oxidizing agents, Strong acids, Metals

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂), peroxides

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<table>
<thead>
<tr>
<th>Component Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
</tr>
<tr>
<td>Water</td>
</tr>
</tbody>
</table>
Irritation
Irritating to eyes and skin

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects
Developmental effects have occurred in experimental animals.

Teratogenicity
Teratogenic effects have occurred in experimental animals.

Other Adverse Effects
See actual entry in RTECS for complete information.

Endocrine Disruptor Information
No information available

---

12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>1000 mg/L EC50 &gt; 72 h 1000 mg/L EC50 &gt; 96 h</td>
<td>1400000 µg/L LC50 96 h 9640 mg/L LC50 96 h 11130 mg/L LC50 96 h</td>
<td>= 35390 mg/L EC50 Photobacterium phosphoreum 5 min</td>
<td>13299 mg/L EC50 = 48 h</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available

Bioaccumulation/ Accumulation
No information available

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>0.05</td>
</tr>
<tr>
<td>Water</td>
<td>-1.87</td>
</tr>
</tbody>
</table>

---

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
14. TRANSPORT INFORMATION

**DOT**

- **UN-No**: UN1219
- **Proper Shipping Name**: ISOPROPANOL
- **Hazard Class**: 3
- **Packing Group**: II

**TDG**

- **UN-No**: UN1219
- **Proper Shipping Name**: ISOPROPANOL
- **Hazard Class**: 3
- **Packing Group**: II

**IATA**

- **UN-No**: UN1219
- **Proper Shipping Name**: ISOPROPANOL
- **Hazard Class**: 3
- **Packing Group**: II

**IMDG/IMO**

- **UN-No**: UN1219
- **Proper Shipping Name**: ISOPROPANOL
- **Hazard Class**: 3
- **Packing Group**: II

15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists:

### International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-661-7</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-29363</td>
<td>X</td>
</tr>
<tr>
<td>Water</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>231-791-2</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:

- **X** - Listed
- **E** - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- **F** - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- **N** - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- **P** - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>64.7</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Categorization

- Acute Health Hazard: Yes
- Chronic Health Hazard: No
- Fire Hazard: Yes
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade
Serious risk, Grade 3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
B2  Flammable liquid
D2B  Toxic materials

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Reviewed
2013.03.06
11:07:29 -05'00'

Creation Date
28-Jan-2010

Print Date
19-Oct-2010

Revision Summary
"***", and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS