1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Acetone

Cat No.: A9-4; A9-20; A9-200; A11-1; A11-4; A11-20; A11-200; A11S-4; A16F-1GAL; A16P-1GAL; A16P-4; A16S-4; A16S-20; A18-1; A18-4; A18-20; A18-200; A18-200LC; A18-500; A18CU1300; A18FB-19; A18FB-50; A18FB-115; A18FB-200; A18P-4; A18POP-19; A18POPB-50; A18RB-19; A18RB-50; A18RB-115; A18RS-28; A18RS-50; A18RS-115; A18RS-200; A18S-4; A18SK-4; A18SS-19; A18SS-28; A18SS-50; A18SS-115; A18SS-200; A19-1; A19-4; A19RS-115; A19RS-200; A40-4; A928-4; A929-1; A929-4; A929RS-19; A929RS-50; A929RS-200; A929SK-4; A929SS-28; A929SS-50; A929SS-115; A929SS-200; A946-4; A946-4LC; A946FB-200; A946FB-19; A946RB-50; A946RB-115; A946RB-200; A949-1; A949-4; A949CU-50; A949N-119; A949N-219; A949POP-19; A949RS-28; A949RS-50; A949RS-115; A949SK-1; A949SK-4; A949SS-19; A949SS-28; A949SS-50; A949SS-115; A949SS-200; BP2403-1; BP2403-4; BP2403-20; BP2404-1; BP2404-4; BP2404SK-1; BP2404SK-4; HC-300-1GAL; 22050131; 22050295

Synonyms: 2-Propanone; Dimethyl ketone; (Certified ACS, HPLC, OPTIMA, Histological, Spectranalyzed, NF/FCC/EP, Pesticide, Electronic, GC Resolv, SAFE-COTE)

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: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview
Flammable liquid and vapor. Irritating to eyes and skin. May cause irritation of respiratory tract. Vapors may cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking.

Appearance: Colorless
Physical State: Liquid
Odor: Sweet

Target Organs: Central nervous system (CNS), Liver, Kidney, Blood, Bone Marrow, Skin
Potential Health Effects

Acute Effects

Principle Routes of Exposure

- **Eyes**
  - Irritating to eyes.

- **Skin**
  - Irritating to skin. May be harmful in contact with skin. Repeated exposure may cause skin dryness or cracking.

- **Inhalation**
  - May be harmful if inhaled. Inhalation may cause central nervous system effects. May cause drowsiness and dizziness. May cause irritation of respiratory tract.

- **Ingestion**
  - May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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

- Central nervous system disorders.
- Preexisting eye disorders.
- Skin disorders.
- Kidney disorders.
- Liver disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acetone</td>
<td>67-64-1</td>
<td>&gt;95</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. 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**
  - -20°C / -4°F

  - **Method**
    - Closed cup

- **Autoignition Temperature**
  - 465°C / 869°F

- **Explosion Limits**
  - **Upper**
    - 12.8 vol %
  - **Lower**
    - 2.5 vol %

- **Oxidizing Properties**
  - Not oxidising

- **Suitable Extinguishing Media**
  - CO₂, dry chemical, dry sand, alcohol-resistant foam. Water spray.
  - Cool closed containers exposed to fire with water spray.

- **Unsuitable Extinguishing Media**
  - Water may be ineffective
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. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and inhalation of vapors.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Remove all sources of ignition. Take precautionary measures against static discharges. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only non-sparking tools. Use explosion-proof equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage
Flammables area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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>Acetone</td>
<td>TWA: 500 ppm</td>
<td>(Vacated) TWA: 750 ppm</td>
<td>IDLH: 2500 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 750 ppm</td>
<td>(Vacated) STEL: 2400 mg/m³</td>
<td>TWA: 250 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 1000 ppm</td>
<td>TWA: 590 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 1000 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 2400 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

| Component | Quebec | Mexico OEL (TWA) | Ontario TWA|E| |
|-----------|--------|-----------------|------------|
| Acetone   | TWA: 500 ppm | TWA: 1000 ppm | TWA: 500 ppm |
|           | TWA: 1190 mg/m³ | TWA: 2400 mg/m³ | STEL: 750 ppm |
|           | STEL: 2380 mg/m³ | STEL: 3000 mg/m³ | |

Legend
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>sweet</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>19.8 ppm</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>247 mbar @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.0</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.32 mPa.s @ 20 °C</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>56°C / 132.8°F</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-95°C / -139°F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 4°C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>-20°C / -4°F</td>
</tr>
<tr>
<td>Method</td>
<td>Closed cup</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>5.6 (Butyl Acetate = 1.0)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.790</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>58.08</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C₃H₆O</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.
Conditions to Avoid
Heat, flames and sparks. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials
Strong oxidizing agents, Strong reducing agents, Strong bases, Peroxides, Halogenated compounds, Alkali metals, Amines

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂), Formaldehyde, Methanol

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>5800 mg/kg (Rat)</td>
<td>&gt; 15800 mg/kg (rabbit)</td>
<td>76 mg/l, 4 h, (rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 7400 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

Irritation
Irritating to eyes and skin

Toxicologically Synergistic Products
Carbon tetrachloride; Chloroform; Trichloroethylene; Bromodichloromethane; Dibromochloromethane; N-nitrosodimethylamine; 1,1,2-Trichloroethane; Styrene; Acetonitrile, 2,5-Hexanedione; Ethanol; 1,2-Dichlorobenzene

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

Other Adverse Effects
Neurotoxic effects have occurred in experimental animals.

Endocrine Disruptor Information
No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity
### Persistence and Degradability
Readily biodegradable.

### Bioaccumulation/Accumulation
No information available

### Mobility
Will likely be mobile in the environment due to its volatility.

<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>Acetone</td>
<td>NOEC = 430 mg/l (algae; 96 h)</td>
<td>Oncorhynchus mykiss: LC50 = 5540 mg/l 96h</td>
<td>EC50 = 14500 mg/L/15 min</td>
<td>EC50 = 8800 mg/L/48h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alburnus alburnus: LC50 = 11000 mg/l 96h</td>
<td></td>
<td>EC50 = 12700 mg/L/48h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leuciscus idus: LC50 = 11300 mg/L/48h</td>
<td></td>
<td>EC50 = 12600 mg/L/48h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salmo gairdneri: LC50 = 6100 mg/L/24h</td>
<td></td>
<td></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.

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - U Series Wastes</th>
<th>RCRA - P Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone - 67-64-1</td>
<td>U002</td>
<td>-</td>
</tr>
</tbody>
</table>

### 14. TRANSPORT INFORMATION

#### DOT
- **UN-No**: UN1090
- **Proper Shipping Name**: ACETONE
- **Hazard Class**: 3
- **Packing Group**: II

#### TDG
- **UN-No**: UN1090
- **Proper Shipping Name**: ACETONE
- **Hazard Class**: 3
- **Packing Group**: II

#### IATA
- **UN-No**: UN1090
- **Proper Shipping Name**: ACETONE
- **Hazard Class**: 3
- **Packing Group**: II

#### IMDG/IMO
- **UN-No**: UN1090
- **Proper Shipping Name**: ACETONE
- **Hazard Class**: 3
- **Packing Group**: II
### 14. TRANSPORT INFORMATION

### 15. REGULATORY INFORMATION

#### 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>Acetone</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-662-2</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</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** Not applicable
- **SARA 311/312 Hazardous Categorization**
  - Acute Health Hazard: Yes
  - Chronic Health Hazard: Yes
  - Fire Hazard: Yes
  - Sudden Release of Pressure Hazard: No
  - Reactive Hazard: No

#### Clean Water Act

Not applicable

#### Clean Air Act

Not applicable

#### OSHA

Occupational Safety and Health Administration

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>5000 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 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>Acetone</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): Y
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product contains the following DHS chemicals:

<table>
<thead>
<tr>
<th>Component</th>
<th>DHS Chemical Facility Anti-Terrorism Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>2000 lb STQ</td>
</tr>
</tbody>
</table>

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
Email: EMSDS.RA@thermofisher.com

Creation Date
28-Apr-2009

Print Date
11-Mar-2014

Revision Summary
Update to Format, (M)SDS sections updated, 4, 8, 9, 11, 12, 15, 16.
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