SAFETY DATA SHEET

Preparation Date: 1/15/2014  Revision Date: 4/04/2018  Revision Number: G4

1. IDENTIFICATION

Product identifier

Product code: A1004
Product Name: ACETONE, ELECTRONIC/CLEANROOM GRADE

Other means of identification

Synonyms:
- beta-Ketopropane
- Dimethyl ketone
- Dimethylformaldehyde
- Dimethylketal
- Ketone propane
- Ketone, dimethyl
- Methyl ketone
- Propanone
- Pyroacetic acid
- Pyroacetic ether
- Acétone (French)
- Acetona (Spanish)

CAS #: 67-64-1
RTECS #: AL3150000
Cl#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent.
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 2</td>
</tr>
</tbody>
</table>
Label elements

Danger

Hazard statements
Causes serious eye irritation
Suspected of damaging fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness
Highly flammable liquid and vapor

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Causes mild skin irritation
Repeated exposure may cause skin dryness or cracking

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/.../equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
In case of fire: Use CO2, dry chemical, or foam to extinguish.
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 ON SKIN (or hair): Remove/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 or doctor/physician if you feel unwell.

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>99-100.5</td>
</tr>
</tbody>
</table>

Product code: A1004  Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms

Moderate eye irritation
Mild skin irritation
Nausea
Vomiting
Central nervous system effects
Dizziness
Drowsiness
Fatigue
Narcosis
Ataxia
Staggering gait
Headache
May affect respiration
Respiratory depression
May cause cardiovascular effects
Hypotension
Weak, rapid pulse or rapid heart rate (Tachycardia)
May cause metabolic acidosis

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Product code: A1004 Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide.

Specific hazards: Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do
Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:
- Oxidizing agents
- Reducing agents
- Bases
- Acids
- activated carbon
- chromium trioxide
- dioxygen difluoride + carbon dioxide
- Potassium dichromate or Sodium dichromate
- Potassium t-butoxide
- Hydrogen peroxide
- Chromic anhydride
- Chromyl chloride
- Hexachloromelamine
- Nitrosyl chloride + Platinum
- Nitrosyl chloride
- Bromine trifluoride
- Thiodiglycol
- 2,4,6-trichloro-1,3,5-triazine + water
- 2-Methyl-1,3-butadiene
- Chloroform

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>1000 ppm TWA</td>
<td>250 ppm TWA</td>
<td>750 ppm STEL</td>
<td>None</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>10 ppm TWA</td>
<td>1 ppm TWA</td>
<td>0.1 ppm TWA</td>
<td>None</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>0.75 ppm TWA</td>
<td>0.016 ppm TWA</td>
<td>0.3 ppm Ceiling</td>
<td>None</td>
</tr>
</tbody>
</table>

Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Canada - Alberta</th>
<th>Canada - British Columbia</th>
<th>Canada - Ontario</th>
<th>Canada - Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>500 ppm TWA</td>
<td>250 ppm TWA</td>
<td>500 ppm TWA</td>
<td>500 ppm TWA</td>
</tr>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>0.5 ppm TWA</td>
<td>0.5 ppm TWA</td>
<td>0.5 ppm TWA</td>
<td>1 ppm TWA</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>1 ppm Ceiling</td>
<td>0.3 ppm TWA</td>
<td>1.5 ppm Ceiling</td>
<td>2 ppm Ceiling</td>
</tr>
</tbody>
</table>

Product code: A1004
Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>1000 ppm STEL</td>
<td>1000 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2375 mg/m³ STEL</td>
<td>2400 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1185 mg/m³ TWA</td>
<td>1260 ppm STEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500 ppm TWA</td>
<td>3000 mg/m³ STEL</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>1.0 ppm/3.2 mg/m³ TWA confirmed carcinogen</td>
<td>1 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.2 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 ppm STEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16 mg/m³ STEL</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>1 ppm/1.2 mg/m³ TWA</td>
<td>2 ppm Ceiling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 ppm/2.5 mg/m³ STEL</td>
<td>3 mg/m³ Ceiling</td>
</tr>
</tbody>
</table>

**Appropriate engineering controls**

**Engineering measures to reduce exposure:**
Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Goggles
- **Skin and body protection:** Chemical resistant apron, Long sleeved clothing, Gloves
- **Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Appearance:</th>
<th>Color:</th>
<th>Formula:</th>
<th>Flash point (°C):</th>
<th>Autoignition Temperature (°C/°F):</th>
<th>Melting point/range(°C/°F):</th>
<th>Bulk density:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>No information available</td>
<td>Clear. Colorless.</td>
<td>C3-H6-O</td>
<td>-20 °C</td>
<td>465 °C/869 °F</td>
<td>-94.7 to -95.4 °C/-138.46 to -139.72</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor:</td>
<td>Fruity. Mint-like. Fragrant. Ethereal.</td>
<td>Taste</td>
<td>Flammable:</td>
<td>No information available</td>
<td>Flash point Tested according to:</td>
<td>Upper Explosion Limit (%):</td>
<td>Boiling point/range(°C/°F):</td>
</tr>
<tr>
<td>Molecular/Formula weight:</td>
<td>58.08</td>
<td>Flammable:</td>
<td>No information available</td>
<td>Closed cup</td>
<td>Open cup</td>
<td>12.8%</td>
<td>56.2 °C/133.2 °F</td>
</tr>
<tr>
<td>Flashpoint (°C/°F):</td>
<td>-20 to -17 °C/-4 to 1.4 °F</td>
<td>Flash Point Tested according to:</td>
<td>1.4 °F</td>
<td>Upper Explosion Limit (%):</td>
<td>-9.4 to -9.1 °C/15.1 to 15.8 °F</td>
<td>Boiling point/range(°C/°F):</td>
<td>Bulk density:</td>
</tr>
<tr>
<td>Lower Explosion Limit (%):</td>
<td>2.5-2.6%</td>
<td>Upper Explosion Limit (%):</td>
<td>12.8%</td>
<td>No information available</td>
<td>Bulk density:</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

**Product code:** A1004

**Product name:** ACETONE, ELECTRONIC/CLEANROOM GRADE
Reactivity
Reactive with oxidizing agents
Reacts with reducing agents
Reacts with strong bases
Acetone ignites on contact with activated carbon, chromium trioxide, dioxygen difluoride + carbon dioxide, potassium-tert-butoxide, sulfuric acid + potassium dichromate
Acetone may form explosive mixtures with chromic anhydride, chromyl chloride, hexachloromelamine, hydrogen peroxide, nitric acid and acetic acid, nitric acid and sulfuric acid, nitrosyl chloride, nitrosyl chloride + platinum, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid, potassium tert-butoxide, thiodiglycol, chloroform, bromine trifluoride, thiotriazetyl perchlorate, 2,4,6-trichloro-1,3,5-triazine + water, 2-methyl-1,3-butadiene, peroxomonosulfuric acid
An explosion occurred during an attempt to prepare bromoform from acetone by the haloform reaction
Chloroform and acetone interact vigorously and exothermally in presence of solid potassium hydroxide or calcium hydroxide to form 1,1,1-trichloro-2-hydroxy-2-methylpropane

Chemical stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization does not occur
Incompatible Materials: Oxidizing agents
Reducing agents
Bases
Acids
activated carbon
chromium trioxide
dioxygen difluoride + carbon dioxide
Potassium dichromate or Sodium dichromate
Potassium t-butoxide
Hydrogen peroxide
Chromic anhydride
Chromyl chloride
Hexachloromelamine
Nitrosyl chloride + Platinum
Nitrosyl chloride

Product code: A1004 Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
Bromine trifluoride
Thiodiglycol
2,4,6-trichloro-1,3,5-triazine + water
2-Methyl-1,3-butadiene
Chloroform

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide.

**Other Information**

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

### 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Principal Routes of Exposure:**
Ingestion. Skin. Eyes. Inhalation.

**Acute Toxicity**

**Component Information**

**Acetone**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>LD50/oral/rat</th>
<th>LD50/oral/mouse</th>
<th>LD50/dermal/rabbit</th>
<th>LC50/inhalation/rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>5800 mg/kg Oral LD50 Rat</td>
<td>3 gm/kg</td>
<td>No information available</td>
<td>50100 mg/m³ Inhalation LC50 Rat 8 h</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>810 mg/kg Oral LD50 Rat = 1800 mg/kg Oral LD50 Rat</td>
<td>4700 mg/kg</td>
<td>&gt;9400 mg/kg Dermal LD50 Rabbit (RTECS)</td>
<td>13050 - 16000 ppm Inhalation LC50 Rat 4 h (EU Commission IUCLID dataset)</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>500 mg/kg Oral LD50 Rat (RTECS and LOLI)</td>
<td>100 mg/kg (RTECS)</td>
<td>500 mg/kg (RTECS)</td>
<td>100 mg/kg (RTECS)</td>
</tr>
</tbody>
</table>

**Product code:** A1004  
**Product name:** ACETONE, ELECTRONIC/CLEANROOM GRADE
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = 260 mg/kg oral LD50 Guinea Pig

Product Information

LD50/oral/rat = VALUE - Acute Tox Oral = 5800
LD50/oral/mouse = Value - Acute Tox Oral = 3000 mg/kg
LD50/dermal/rabbit VALUE - Acute Tox Dermal = 20000 mg/kg
LD50/dermal/rat VALUE - Acute Tox Dermal = No information available
LC50/inhalation/rat VALUE -Vapor = 76 mg/l (4-hr)
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available
LC50/Inhalation/mouse VALUE -Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation. Mildly to moderately irritating to the skin. It may be absorbed through the skin. If absorbed through skin it may cause systemic effects with symptoms similar to those of ingestion.

Eye Contact: Causes eye irritation. Moderately irritating to the eyes. May cause corneal injury.

Inhalation Irritating to respiratory system. May cause conjunctival irritation. May cause nausea, vomiting. May cause loss of appetite. May affect the brain. May affect the kidneys. May cause muscle weakness. May affect respiration (respiratory depression). Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unsteady gait, drowsiness, lethargy, sleepiness lightheadedness, fainting, narcosis, confusion, loss of coordination, lassitude, speech abnormalities, tremor, unconsciousness, coma. May cause metabolic acidosis. May cause other symptoms similar to those of ingestion.

Ingestion May cause digestive (gastrointestinal) tract irritation. Ingestion may cause nausea, vomiting. It may affect metabolism (ketosis/ketonemia/ketonuria). May cause hyperglycemia. May affect liver. May affect respiration. May affect the cardiovascular system (hypotension). May affect the cardiovascular system (weak rapid pulse, tachycardia). May cause metabolic acidosis. May affect urinary system (kidneys). It may affect the joints. It may affect the skeletal muscles. It may affect behavior/central nervous system (depression, headache, tremors, ataxia, hyperesthesia, stupor, sedation, fatigue, excitement, seizures, coma).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated skin contact may cause defatting and drying of the skin,

Product code: A1004  Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
and brittle nails. Prolonged or repeated inhalation may affect the brain. Prolonged or repeated inhalation may affect the blood (changes in red blood cell count, granulocytopenia). Prolonged or repeated inhalation may affect the cardiovascular system. Prolonged or repeated inhalation may affect the thyroid (evidence of thyroid hyperfunction). Prolonged or repeated ingestion may affect the spleen. Prolonged or repeated ingestion may affect the bladder. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may affect the blood (normocytic anemia, macrocytosis). Prolonged or repeated inhalation may cause eye and throat irritation and bronchitis. Prolonged or repeated inhalation may cause nausea, gastritis, loss of appetite, and weight loss. Prolonged or repeated inhalation may cause central nervous system effects such as weakness, dizziness, drowsiness, and vertigo.

**Sensitization:**

No information available.

**Mutagenic Effects:**

May affect genetic material
Sex Chromosome Loss and Nondisjunction in Saccharomyces cerevisiae (yeast) Cytogenetic analysis (Hamster fibroblast)

**Carcinogenic effects:**

Not classifiable as a human carcinogen.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>Not listed</td>
<td>A4 Not Classifiable as a Human Carcinogen</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Monograph 100F [2012] Supplement 7 [1987] Monograph 29 [1982]</td>
<td>A1 Confirmed Human Carcinogen</td>
<td>Known Human Carcinogen</td>
<td>Present see 29 CFR 1910.1028</td>
<td>Present includes pure substance or mixtures containing &gt;=0.1% (w/w) concentration. Restricted use: all uses involving Benzene as a feedstock containing &gt;50% of Benzene by volume.genuine research or analysis</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)
**Reproductive toxicity**
Suspected of damaging fertility or the unborn child

**Reproductive Effects:**
No information available

**Developmental Effects:**
Possible risk of harm to the unborn child

**Teratogenic Effects:**
No information available

**Specific Target Organ Toxicity**

**STOT - single exposure**
Respiratory system. central nervous system.

**STOT - repeated exposure**
No information available.

**Target Organs:**

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### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Ecotoxicity effects:**
Aquatic environment.

**Acetone - 67-64-1**

**Freshwater Fish Species Data:**
4.74 - 6.33 mL/L LC50 Oncorhynchus mykiss 96 h 1
8300 mg/L LC50 Lepomis macrochirus 96 h 1
6210 - 8120 mg/L LC50 Pimephales promelas 96 h static 1

**Water Flea Data:**
10294 - 17704 mg/L EC50 Daphnia magna 48 h
12600 - 12700 mg/L EC50 Daphnia magna 48 h

**Benzene - 71-43-2**

**Freshwater Algae Data:**
29 mg/L EC50 Pseudokirchneriella subcapitata 72 h

**Freshwater Fish Species Data:**
10.7 - 14.7 mg/L LC50 Pimephales promelas 96 h flow-through 1 5.3 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1 22.49 mg/L LC50 Lepomis macrochirus 96 h static 1 28.6 mg/L LC50 Poecilia reticulata 96 h static 1 22330 - 41160 µg/L LC50 Pimephales promelas 96 h static 1 70000 - 142000 µg/L LC50 Lepomis macrochirus 96 h static 1

**Water Flea Data:**
8.76 - 15.6 mg/L EC50 Daphnia magna 48 h 10 mg/L EC50 Daphnia magna 48 h

**Formaldehyde - 50-00-0**

**Freshwater Fish Species Data:**
0.032 - 0.226 mL/L LC50 Oncorhynchus mykiss 96 h flow-through 1
100 - 136 mg/L LC50 Oncorhynchus mykiss 96 h static 1
22.6 - 25.7 mg/L LC50 Pimephales promelas 96 h flow-through 1
23.2 - 29.7 mg/L LC50 Pimephales promelas 96 h static 1
1510 µg/L LC50 Lepomis macrochirus 96 h static 1
41 mg/L LC50 Brachydanio rerio 96 h static 1

**Water Flea Data:**
11.3 - 18 mg/L EC50 Daphnia magna 48 h
2 mg/L LC50 Daphnia magna 48 h

**Persistence and degradability:**
No information available

**Bioaccumulative potential:**
No information available.

**Mobility:**
No information available.

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### 13. DISPOSAL CONSIDERATIONS

**Disposal Methods**

**Waste from residues / unused products:**
Waste must be disposed of in accordance with Federal, State and Local regulation.

**Product code:** A1004

**Product name:** ACETONE, ELECTRONIC/CLEANROOM GRADE
Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>U002 ignitable waste</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>U019 ignitable waste,</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>J122</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN1090
Proper Shipping Name: Acetone
Hazard Class: 3
Subsidiary Class: No information available
Packing group: II
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): 5000 lbs./2270 kg
Special Provisions: No Information available
Symbol(s): [DOT]: (R5) - Identifies a material that is a hazardous substance that has a reportable quantity (RQ) of 5000 pounds (2270 Kilograms).
Description: UN1090, Acetone, 3,, PG II

TDG (Canada)

UN-No: UN1090
Proper Shipping Name: Acetone
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No Information available
Description: ACETONE, 3, UN1090, PG II

ADR

UN-No: UN1090
Proper Shipping Name: Acetone
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Description: UN1090 Acetone, 3, II

IMO / IMDG

UN-No: UN1090
Proper Shipping Name: Acetone (Acetone solutions)
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No information available
EMS: F-E

RID

UN-No: UN1090
Proper Shipping Name: Acetone
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II

Product code: A1004
Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
Description: UN1090 Acetone,3,II,RID

ICAO
- UN-No: UN1090
- Proper Shipping Name: Acetone
- Hazard Class: 3
- Subsidiary Risk: No information available
- Packing Group: II
- Description: Acetone,3,UN1090,PG II

IATA
- UN-No: UN1090
- Proper Shipping Name: Acetone
- Hazard Class: 3
- Subsidiary Risk: No information available
- Packing Group: II
- ERG Code: 3H
- Special Provisions: No information available
- Description: UN1090,Acetone,3,PG II

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Present (ACTIVE)</td>
<td>Present KE-02150</td>
<td>Present</td>
<td>Present (3)-1</td>
<td>Present</td>
<td>Present</td>
<td>Present 200-753-7</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>Present (ACTIVE)</td>
<td>Present KE-17074</td>
<td>Present</td>
<td>Present (2)-482</td>
<td>Present</td>
<td>Present</td>
<td>Present 200-001-8</td>
</tr>
</tbody>
</table>

U.S. Regulations

Acetone
- Massachusetts RTK: Present
- New Jersey RTK Hazardous Substance List: Present (sn 006)
- New Jersey - Discharge Prevention - List of Hazardous Substances: Present
- Pennsylvania RTK: Environmental hazard
- Pennsylvania RTK - Environmental Hazard List: Present
- Minnesota - Hazardous Substance List: Present
- New York Release Reporting - List of Hazardous Substances:
  - = 1 lb RQ (land/water)
  - = 5000 lb RQ (air)
- Louisiana Reportable Quantity List for Pollutants: Listed
- California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives
- 21 CFR 173.210

FDA - 21 CFR - Total Food Additives
- 173.210 175.105 175.320 176.180 176.300 177.2600 73.1 73.30 73.345 73.615

Benzene
- Massachusetts RTK: Present
- New Jersey RTK Hazardous Substance List: 0197
- New Jersey (EHS) List: 0197 500 lb TPQ
- New Jersey - Discharge Prevention - List of Hazardous Substances: Present
- Pennsylvania RTK: Environmental hazard
- Pennsylvania RTK - Environmental Hazard List: Present
- Pennsylvania RTK - Special Hazardous Substances: Present
- Michigan - Critical Materials List: Present
- Minnesota - Hazardous Substance List: Present
- New York Release Reporting - List of Hazardous Substances:

Product code: A1004  Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
10 lb RQ
1 lb RQ
Connecticut - Carcinogenic Substances: Present
Louisiana Reportable Quantity List for Pollutants: 10lbfinal RQ receives an adjustable RQ of 10 lbs based on potential carcinogenicity in August 14, 1989 final rule
4.54kgfinal RQ receives an adjustable RQ of 10 lbs based on potential carcinogenicity in August 14, 1989 final rule
California Directors List of Hazardous Substances: Present
FDA - 21 CFR - Total Food Additives 172.560, 175.105

Formaldehyde
Massachusetts RTK: Present
Massachusetts EHS: carcinogen; extraordinarily hazardous
New Jersey RTK Hazardous Substance List: 0946
New Jersey (EHS) List: 0946 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
New Jersey TCPA - EHS: 175lbTQ 15000lbTQ
Pennsylvania RTK: Environmental hazard
Special hazardous substance
Pennsylvania RTK - Environmental Hazard List Present
Pennsylvania RTK - Special Hazardous Substances Present
Michigan PSM HHC: = 1000 lb TQ
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
100 lb RQ
1 lb RQ
Louisiana Reportable Quantity List for Pollutants: 100lbfinal RQ 45.4kgfinal RQ
California Directors List of Hazardous Substances: Present
FDA - Direct Food Additives 21 CFR 173.340


Chemicals Known to the State of California to Cause Cancer:

⚠️ WARNING: This product can expose you to chemicals including (see table below) which is (are) known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

Chemicals Known to the State of California to Cause Reproductive Toxicity:

⚠️ WARNING: This product can expose you to chemicals including (see table below) which is (are) known to the State of California to cause birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>carcinogen</td>
<td>developmental toxicity</td>
<td>male reproductive toxicity</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>carcinogen</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>5000 lb final RQ 2270 kg final RQ</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>10 lb final RQ 4.54 kg final RQ</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>0.1 % de minimis concentration</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>100 lb final RQ 45.4 kg final RQ</td>
<td>100 lb EPCRA RQ</td>
<td>None</td>
<td>None</td>
<td>0.1 % de minimis concentration</td>
</tr>
</tbody>
</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TSCA Section 5(a)2 - Chemicals</th>
<th>TSCA 8(d) - Health and Safety</th>
</tr>
</thead>
</table>

Product code: A1004  Product name: ACETONE, ELECTRONIC/CLEANROOM GRADE
<table>
<thead>
<tr>
<th>Component</th>
<th>Code Number</th>
<th>SNURS Reporting</th>
<th>WHMIS 2015 - GHS Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>Not Applicable</td>
<td>Flammable liquids - Category 2: H225 Highly flammable liquid and vapour.; Serious Eye Damage/Eye Irritation - Category 2A: H319 Causes serious eye irritation.</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Not Applicable</td>
<td>Flammable liquids - Category 2: H225 Highly flammable liquid and vapour.; Skin corrosion/irritation - Category 2: H315 Causes skin irritation.; Serious Eye Damage/Eye Irritation - Category 2: H319 Causes serious eye irritation.; Germ cell mutagenicity - Category 1B: H340 May cause genetic defects.; Carcinogenicity - Category 1A: H350 May cause cancer.; Specific target organ toxicity - Repeated exposure - Category 1: H372 Causes damage to organs through prolonged or repeated exposure.; Aspiration hazard - Category 1: H304 May be fatal if swallowed and enters airways.</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>Not Applicable</td>
<td>Flammable gases - Category 1: H220 Extremely flammable gas.; Flammable liquids - Category 3: H226 Flammable liquid and vapour. (solution, 37%); Corrosive to Metals - Category 1: H290 May be corrosive to metals. (solution, 37%); Acute toxicity - Oral - Category 4: H302 Harmful if swallowed. (solution, 37%); Acute toxicity - Dermal - Category 3: H311 Toxic in contact with skin. (solution, 37%); Acute toxicity - Inhalation - Category 2: H330 Fatal if inhaled.; Skin corrosion/irritation - Category 2: H315 Causes skin irritation. (solution, 37%); Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage. (solution, 37%); Serious Eye Damage/Eye Irritation - Category 2: H319 Causes serious eye irritation.; Skin sensitizers - Category 1A: H317 May cause allergic skin reaction. (solution, 37%); Germ cell mutagenicity - Category 2: H341 Suspected of causing genetic defects.; Carcinogenicity - Category 1A: H350 May cause cancer.; Reproductive Toxicity - Category 1: H360 May damage fertility or the unborn child. (solution, 37%); contains 16% of a substance that is toxic to reproduction (Methyl alcohol); Specific target organ toxicity - Single exposure - Category 2: H371 May cause damage to organs. (solution, 37%); Specific target organ toxicity - Single exposure - Category 3: H335 May cause respiratory irritation.; Specific target organ toxicity - Single exposure - Category 3: H336 May cause drowsiness or dizziness. (solution, 37%)</td>
</tr>
</tbody>
</table>

**Canada Hazardous Products Regulation**

This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR.

**WHMIS 1988 Hazard Class**

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS 1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>B2, D2B</td>
</tr>
<tr>
<td>Benzene</td>
<td>B2, D2A, D2B</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>A, B1, D1A, D2A, D2B</td>
</tr>
</tbody>
</table>

**Canada Controlled Products Regulation**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS.
contains all of the information required by the CPR.

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS Ingredient Disclosure List -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>1 %</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.1 %</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>0.1 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>Acetone</td>
</tr>
<tr>
<td>Benzene</td>
</tr>
<tr>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EU Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU GHS - SV - CLP 1272/2008</td>
</tr>
<tr>
<td>Components</td>
</tr>
<tr>
<td>Acetone</td>
</tr>
<tr>
<td>Benzene</td>
</tr>
<tr>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>

| EU - CLP (1272/2008) |

**R-phrase(s)**
- R11 - Highly flammable.
- R36 - Irritating to eyes.
- R66 - Repeated exposure may cause skin dryness or cracking.
- R67 - Vapors may cause drowsiness and diziness.

**S-phrase(s)**
- S9 - Keep container in a well-ventilated place.
- S16 - Keep away from sources of ignition - No smoking.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Product code:** A1004

**Product name:** ACETONE, ELECTRONIC/CLEANROOM GRADE

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<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>F; R11 Xi; R36 R66 R67</td>
<td>No information</td>
<td>S2 S9 S16 S26</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>F; R11 Xi; R36/38 Carc.Cat.1; R45 Muta.Cat.2; R46 T; R48/23/24/25 Xn; R65</td>
<td>No information</td>
<td>S53 S45</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>0.2%&lt;=C&lt;1% Xi;R43 1%&lt;=C&lt;5% Xn;R40-43 25%&lt;=C&lt;5% T;R23/24/25-34-40-43 5%&lt;=C&lt;25% Xn;R20/21/22-36/37/38-40-43</td>
<td>S(1/2)-S26-S36/37/39-S45-S51</td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
Xi - Irritant.
F - Highly flammable.

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>Preparation Date:</th>
<th>1/15/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision Date:</td>
<td>4/04/2018</td>
</tr>
<tr>
<td>Prepared by:</td>
<td>Sonia Owen</td>
</tr>
</tbody>
</table>

**Disclaimer:**
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**Product code:** A1004
**Product name:** ACETONE, ELECTRONIC/CLEANROOM GRADE