# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

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| **Material name** | **ACETONE, ACS ULTRAVIOLET SPECTROPHOTOMETRY GRADE** |
| **Catalog #** | 829 |
| **Version #** | 02 |
| **Revision date** | 24-Jun-2009 |
| **CAS #** | 67-64-1 |
| **Synonym(s)** | 2-PROPANONE * Dimethyl ketone |
| **Manufacturer information** | GFS Chemicals, Inc.<br>P.O. Box 245<br>Powell, OH 43065 US<br>www.gfschemicals.com<br>Fax 740-881-5989<br>Phone 740-881-5501<br>Toll Free 800-858-9682<br>Emergency Assistance Chemtrec 800-424-8300 |

## 2. Hazards Identification

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| **Emergency overview** | DANGER<br><br>EXTREMELY FLAMMABLE LIQUID AND VAPOR.<br>Vapors may cause a flash fire or ignite explosively. Will be easily ignited by heat, spark or flames.<br><br>May be fatal if absorbed through skin. Harmful in contact with eyes. Prolonged exposure may cause chronic effects. |
| **OSHA regulatory status** | This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). |
| **Potential health effects** | |
| **Routes of exposure** | Inhalation. Ingestion. Skin contact. Eye contact. |
| **Eyes** | Very toxic in contact with eyes. Contact may irritate or burn eyes. Eye contact may result in corneal injury. Do not get this material in contact with eyes. |
| **Skin** | Very toxic in contact with skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Avoid contact with the skin. |
| **Inhalation** | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| **Ingestion** | Components of the product may be absorbed into the body by ingestion. Do not ingest. |
| **Target organs** | Eyes. Respiratory system. Skin. Central nervous system. |
| **Chronic effects** | Conjunctiva. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Prolonged skin contact may defat the skin and produce dermatitis. |
| **Signs and symptoms** | Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Conjunctivitis. Defatting of the skin. Skin irritation. Rash. |
| **Potential environmental effects** | May cause long-term adverse effects in the environment. |

## 3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|---|---|---|
| ACETONE | 67-64-1 | 90 - 100 |

## 4. First Aid Measures

**First aid procedures**

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| **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 immediately. |

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| **Skin contact** | Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse. |
| **Inhalation** | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| **Ingestion** | Have victim rinse mouth thoroughly with water. If ingestion of a large amount does occur, call a poison control center immediately. |
| **Notes to physician** | Symptoms may be delayed. |
| **General advice** | Take off contaminated clothing and shoes immediately. If you feel unwell, seek medical advice (show the label where possible). In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire Fighting Measures

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| **Flammable properties** | Flammable by OSHA criteria. Heat may cause the containers to explode. Vapor or gas may spread to distant ignition sources and flash back. Runoff to sewer may cause fire or explosion hazard. |
| **Extinguishing media** | |
| **Suitable extinguishing media** | Water. Foam. Dry powder. Carbon dioxide ($CO_2$). |
| **Unsuitable extinguishing media** | Do not use a solid water stream as it may scatter and spread fire. |
| **Protection of firefighters** | |
| **Specific hazards arising from the chemical** | Fire may produce irritating, corrosive and/or toxic gases. |
| **Protective equipment and precautions for firefighters** | In case of fire and/or explosion do not breathe fumes. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. |
| **Specific methods** | In the event of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. |

## 6. Accidental Release Measures

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| **Personal precautions** | Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. |
| **Environmental precautions** | Prevent further leakage or spillage if safe to do so. Do not contaminate water. |
| **Methods for containment** | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. |
| **Methods for cleaning up** | Should not be released into the environment.<br><br>Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.<br><br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water.<br><br>Never return spills in original containers for re-use. |

## 7. Handling and Storage

**Handling**

Vapors may form explosive mixtures with air. Do not handle or store near an open flame, heat or other sources of ignition. Do not smoke. All equipment used when handling the product must be grounded. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Use only in area provided with appropriate exhaust ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Avoid release to the environment.

**Storage**

The pressure in sealed containers can increase under the influence of heat. Keep away from heat, sparks and open flame. Keep away from heat and sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep this material away from food, drink and animal feed. Keep out of the reach of children. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

**Occupational exposure limits**

**ACGIH**

| Material | CAS # | Type | Value | Form |
|---|---|---|---|---|
| ACETONE | 67-64-1 | STEL | 750 ppm | |
| | | TWA | 500 ppm | |

**U.S. - OSHA**

| Material | CAS # | Type | Value | Form |
|---|---|---|---|---|
| ACETONE | 67-64-1 | PEL | 1000 ppm | |
| | | | 2400 mg/m3 | |
| | | STEL | 2400 mg/m3 | |
| | | | 1000 ppm | |
| | | TWA | 750 ppm | |
| | | | 1800 mg/m3 | |

**Engineering controls**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

**Respiratory protection**

Use an organic vapor respirator for concentrations exceeding the Occupational Exposure Limit.

**Hand protection**

Wear protective gloves.

**Eye / face protection**

Do not get this material in contact with eyes. Wear chemical goggles. Face-shield.

**Skin protection**

Wear chemical protective equipment that is specifically recommended by the manufacturer. Wear appropriate chemical resistant clothing. It may provide little or no thermal protection. Wear appropriate chemical resistant gloves.

**General hygeine considerations**

When using do not smoke. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Wash hands after handling and before eating. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical & Chemical Properties

**Appearance** Clear.

**Color** Colorless.

**Odor** Acetone.

**Odor threshold** Not available.

**Physical state** Liquid.

**Form** Liquid.

**pH** Not available.

**Melting point** -139 °F (-94.8 °C) estimated

**Freezing point** -139 °F (-94.8 °C)

| | |
|---|---|
| **Boiling point** | 132.8 °F (56 °C) 101.3232 kPa |
| **Flash point** | -4 °F (-20 °C) estimated Closed Cup |
| **Evaporation rate** | Not available. |
| **Flammability** | Not available. |
| **Flammability limits in air, upper, % by volume** | 12.8 % |
| **Flammability limits in air, lower, % by volume** | 2.6 % |
| **Vapor pressure** | 30.7969 kPa at 25°C |
| **Vapor density** | Not available. |
| **Specific gravity** | 0.7899 |
| **Relative density** | 0.7898 g/cm3 estimated |
| **Solubility (water)** | Miscible |
| **Partition coefficient (n-octanol/water)** | -0.24 |
| **Auto-ignition temperature** | 869 °F (465 °C) estimated |
| **Decomposition temperature** | Not available. |
| **VOC** | 100 % estimated |
| **Percent volatile** | 100 % estimated |
| **Molecular weight** | 58.0800 g/mol |
| **Molecular formula** | C3-H6-O |

## 10. Chemical Stability & Reactivity Information

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| **Chemical stability** | Stable at normal conditions. Risk of ignition. |
| **Conditions to avoid** | Heat, flames and sparks. |
| **Incompatible materials** | Acids. Strong oxidizing agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |

## 11. Toxicological Information

### Acute effects

**Acute Dermal: LD 50**

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|---|---|---|
| ACETONE | 67-64-1 | Rabbit 20 mg/kg |
| ACETONE | 67-64-1 | Rabbit 20000 mg/kg |

**Acute Inhalation: LC 50**

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|---|---|---|
| ACETONE | 67-64-1 | Rat 76 mg/l 4 h |
| ACETONE | 67-64-1 | Rat 50.1 mg/l 8 h |

**Acute Oral: LD 50**

| | | |
|---|---|---|
| ACETONE | 67-64-1 | Rat 9800 mg/kg |
| ACETONE | 67-64-1 | Mouse 3000 mg/kg |
| ACETONE | 67-64-1 | Rat 5800 mg/kg |
| ACETONE | 67-64-1 | Rabbit 5340 mg/kg |
| ACETONE | 67-64-1 | Mouse 5.2 g/kg |

**Acute Toxicity other routes: LD 50**

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|---|---|---|
| ACETONE | 67-64-1 | Mouse 1297 mg/kg Intraperitoneal |
| ACETONE | 67-64-1 | Rat 5500 mg/kg Intravenous |

**Toxicology data for the preparation**

Acute LD50: 20 mg/kg, Rabbit, Dermal
Acute LD50: 20000 mg/kg, Rabbit, Dermal
Acute LD50: 1297 mg/kg, Mouse, Other
Acute LD50: 5500 mg/kg, Rat, Other
Acute LC50: 50.1 mg/l, Rat, Inhalation
Acute LC50: 76 mg/l, Rat, Inhalation
Acute LD50: 3000 mg/kg, Mouse, Oral
Acute LD50: 5.2 g/kg, Mouse, Oral
Acute LD50: 5340 mg/kg, Rabbit, Oral
Acute LD50: 5800 mg/kg, Rat, Oral
Acute LD50: 9800 mg/kg, Rat, Oral

**Local effects** Components of the product may be absorbed into the body through the skin. Contact may irritate or burn eyes.

**Chronic effects** Hazardous by OSHA criteria. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**US ACGIH Threshold Limit Values: A4 carcinogen**

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|---|---|---|
| ACETONE | 67-64-1 | Group A4 Not classifiable as a human carcinogen. |

**Epidemiology** Hazardous by OSHA criteria.

**Neurological effects** Hazardous by OSHA criteria.

**Further information** Symptoms may be delayed.

## 12. Ecological Information

**Ecotoxicity** Components of this product have been identified as having potential environmental concerns.

**Invertebrate Toxicity: EC 50**

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|---|---|---|
| ACETONE | 67-64-1 | Water flea (Daphnia magna) > 100 mg/l 24 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) > 100 mg/l 4 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) > 100 mg/l 2 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) 10294 - 17704 mg/l 48 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) 21.3 - 35.5 mg/l 24 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) 21.6 - 23.9 mg/l 48 h Static Intoxication |
| ACETONE | 67-64-1 | Water flea (Daphnia magna) > 100 mg/l 6 h Static Intoxication |

**Micro-organisms Toxicity: LC 50**

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|---|---|---|
| ACETONE | 67-64-1 | Turbellarian, flatworm (Dugesia tigrina) > 100 mg/l 96 h Static Mortality |
| ACETONE | 67-64-1 | Diatom (Nitzschia linearis) 11.493 - 11.727 mg/l 5 d Static Mortality |

**Environmental effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Persistence and degradability** Not available.

**Partition coefficient** -0.24

## 13. Disposal Considerations

**Waste codes** D001: Waste Flammable material with a flash point <140 F

**US RCRA Hazardous Waste U List: Reference**

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|---|---|---|
| ACETONE | 67-64-1 | U002 |

**Disposal instructions** Dispose of this material and its container at hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose in accordance with all applicable regulations.

## 14. Transport Information

**DOT**

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| **Basic shipping requirements:** | |
| **Proper shipping name** | Flammable liquids, toxic, n.o.s. |
| **Hazard class** | 3 |
| **Subsidiary hazard class** | 6.1 |
| **UN number** | UN1992 |
| **Packing group** | I |
| **Additional information:** | |
| **Special provisions** | T14, TP2, TP13, TP27 |
| **Packaging exceptions** | None |
| **Packaging non bulk** | 201 |
| **Packaging bulk** | 243 |
| **Reportable quantity** | 5000 |
| **ERG number** | 131 |

## 15. Regulatory Information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

**CERCLA (Superfund) reportable quantity**

ACETONE, ACS ULTRAVIOLET SPECTROPHOTOMETRY GRADE: 5000.0000

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

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| **Hazard categories** | Immediate Hazard - Yes<br>Delayed Hazard - Yes<br>Fire Hazard - Yes<br>Pressure Hazard - No<br>Reactivity Hazard - No |
| **Section 302 extremely hazardous substance** | No |
| **Section 311 hazardous chemical** | Yes |

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of New and Existing Chemicals (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

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| ACETONE | 67-64-1 | Listed. |

## 16. Other Information

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| **Further information** | HMIS® is a registered trade and service mark of the NPCA. |
| **HMIS® ratings** | Health: 4*<br>Flammability: 3<br>Physical hazard: 0 |
| **NFPA ratings** | Health: 1<br>Flammability: 3<br>Instability: 0 |
| **Disclaimer** | The information in the sheet was written based on the best knowledge and experience currently available. The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text. |
| **Issue date** | 24-Jun-2009 |
| **This data sheet contains changes from the previous version in section(s):** | This document has undergone significant changes and should be reviewed in its entirety. |