MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**ACETONE, REAGENT (ACS)**
Catalog #	828
Version #	02
Revision date	24-Jun-2009
CAS #	67-64-1
Synonym(s)	2-PROPANONE * Dimethyl ketone
Manufacturer information	GFS Chemicals, Inc. P.O. Box 245 Powell, OH 43065 US www.gfschemicals.com Fax 740-881-5989 Phone 740-881-5501 Toll Free 800-858-9682 Emergency Assistance Chemtrec 800-424-8300

2. Hazards Identification

Emergency overview	DANGER EXTREMELY FLAMMABLE LIQUID AND VAPOR. Vapors may cause a flash fire or ignite explosively. Will be easily ignited by heat, spark or flames. 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

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.

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

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

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. 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. 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. 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

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

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

Acute Inhalation: LC 50

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

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

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

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

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

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

Basic shipping requirements:

Proper shipping name	Acetone
Hazard class	3
UN number	UN1090
Packing group	II
Additional information:	
Special provisions	IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
Reportable quantity	5000
ERG number	127

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, REAGENT (ACS): 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No 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

ACETONE	67-64-1	Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 4* Flammability: 3 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 3 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.
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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.