Material Safety Data Sheet

1. Chemical Product and Company Identification

Product Name: Acetone
Synonyms: Dimethyl ketone, 2-propanone

Name of Manufacturer: **CFS Chemicals**
201 Wilkinson Rd
Brampton,
ONTARIO L6T 4M4
1 (866) 669-7608

National Response in Canada: CANUTEC—1-613-996-6666
24 Hour Emergency Response in US: CHEMTREC—1-800-424-9300
Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. Composition and Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Acetone	67-64-1	>99%	Yes

3. Hazards Identification

DANGER! CAUSES EYE IRRITATION. HIGH VAPOUR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION OF THE EYES OR RESPIRATORY TRACT. ASPIRATION HAZARD IF SWALLOWED. PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING OR IRRITATION. HIGHLY FLAMMABLE LIQUID AND VAPOUR. VAPOUR MAY CAUSE FLASH FIRE. TARGET ORGANS: CENTRAL NERVOUS SYSTEM, RESPIRATORY SYSTEM, EYES, SKIN.

Acute Potential Health Effects:
Inhalation: Inhalation of high concentrations may cause central nervous effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes upper respiratory tract irritation. May cause motor incoordination or speech abnormalities.
Eye: Vapours are irritating to the eyes and may cause a burning sensation, redness, tearing, inflammation and possible corneal injury.
Skin: Irritation due to defatting action on skin may cause redness, pain, drying and cracking of the skin. May be absorbed through the skin.
Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression with excitement followed by headache, drowsiness, nausea and vomiting. Advanced stages may characterized by collapse, unconsciousness, coma and possibly death. Aspiration into lungs may cause chemical pneumonitis which may be fatal.

Chronic Potential Health Effects:
Repeated or prolonged exposure may cause severe irritation or dermatitis. Chronic inhalation

may cause effects similar to acute inhalation. Matsushita *et al*. exposed human volunteers to 500 ppm for 6 h/day for 6 days and found haematological changes including significantly increased leukocyte and eosinophil counts and decreased neutrophil phagocyte activity.
Mutagenic: Some effects observed. See Section 11.
Teratogenic: Some effects observed. See Section 11.
Reproductive: Some effects observed. See Section 11.

4. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, begin artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin Contact: Remove any contaminated clothing. Wash skin immediately with soap and plenty of water for at least 15 minutes.
Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.
Ingestion: Aspiration hazard if swallowed. Get medical help immediately. Do not induce vomiting unless directed by medical personnel. If vomiting occurs, have victim lean forward.

5. Fire Fighting Measures

Flammability: Highly flammable liquid and vapour (GHS Category 2)
Auto-ignition Temperature: 465 °C (869 °F)
Flash Point: -20 °C (-4 °F)
Flammable Limits: Lower Limit 2.5%, Upper Limit 12.8%
Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (carbon monoxide and carbon dioxide).
Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Vapours may form explosive mixtures with air. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Vapours are heavier than air and may travel to a source of ignition and flash back. Vapours can spread along the ground and collect in low or confined areas.
Specific Explosion Hazards: None.
Extinguishing Media: Water may be ineffective. Do not use straight streams of water. For small fires use carbon dioxide, dry chemical or alcohol resistant foam.
NFPA Rating: Health 1, Flammability 3, Instability 0

6. Accidental Release Measures

Use water spray to reduce vapours. Water spray may reduce vapours but still not prevent ignition in closed spaces. Absorb spilled liquid with sorbent pads, socks or other inert material such as vermiculite, sand or earth. Do not use sawdust or any other combustible material. Use spark proof tools. Provide ventilation to the affected area and remove all sources of ignition. Approach the spill upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. Handling and Storage

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin and clothing. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Take precautionary measures against static discharges. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Store in a tightly closed container. Keep in a flammables area away from all sources of

ignition and oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. Exposure Controls and Personal Protection

Engineering Controls: Use explosion proof ventilation equipment. Facilities storing or using the material should be equipped with an eyewash station and safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissable exposure limits.
Personal Protection: Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Exposure Limits:

ACGIH - 50 ppm TWA; Skin – potential significant contribution to overall exposure by cutaneous route
NIOSH - 50 ppmTWA; 180 mg/m^3 TWA; 1100 ppm IDLH
OSHA Final PELs - 500 ppm TWA; 1800 mg/m^3 TWA
OSHA Vacated PELs – No information available

Eye Protection: Wear protective chemical goggles or other appropriate eye protection.

9. Physical and Chemical Properties

Physical State and Appearance: Clear, colorless liquid.
Odor: Sweet.
Odor Threshold: 130 ppm
Taste: No information available.
Molecular Formula: C_3H_6O
Molecular Weight: 58.08 g/mol
pH: 7
Boiling Point: 56.5 °C @ 760 mm Hg
Freezing/Melting Point: -94 °C (-137.2 °F)
Decomposition Temperature: No information available.
Vapour Pressure: 33 mm Hg @ 20 °C
Specific Gravity: 0.788 g/mL @ 20 °C
Solubility in Water: Soluble.
Viscoscity: 0.32 cP @ 20 °C
Vapour Density (Air=1): 2.0
Evaporation Rate (n-Butylacetate =1): 5.6

10. Stability and Reactivity

Stability: Stable at room temperatures in closed containers under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, electrical sparks and confined spaces.
Incompatibility With Various Substances: Strong oxidizing agents, strong acids and strong bases, nitric acid, hexachlormelamine, sulfur dichloride, potassium *tert*-butoxide.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.
Hazardous polymerization: Will not occur.

11. Toxicological Information

Routes of Entry: Inhalation, skin absorption, skin contact
Animal Toxicity:
Dermal, guinea pig: LD_{50} = >9400 μL/kg
Draize test, rabbit, eye: 20 mg Severe
Draize test, rabbit, eye: 20 mg/242 h Moderate

Draize test, rabbit, eye: 10 μL Mild
Draize test, rabbit, skin: 500 mg/24 h Mild
Inhalation, mouse: LC_{50} = 44 gm/m3/4 h
Inhalation, rat: LC_{50} = 50,100 mg/m3/4 h
Oral, mouse: LD_{50} = 3 g/kg
Oral, rat: LD_{50} = 5340 mg/kg
Oral, rat: LD_{50} = 5800 mg/kg

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65
Epidemiology: In a series of studies, no statistically different significances in cause of death or clinical laboratory results were observed in 948 employees exposed to up to 1070 ppm acetone over 23 years.
Teratogenicity: Animal studies have only shown harmful effects in the offspring of animals exposed to doses that also produced significant maternal toxicity.
Reproductive Effects: During the Stewart et al. study, four adult female volunteers were exposed 7.5 hours to acetone vapor at a nominal concentration of 1000 ppm. Three of the four women experienced premature menstrual periods which were attributed to the acetone exposure.
Mutagenicity: Sex chromosome loss and nondisjunction (Yeast – *Saccharomyces cerevisiae*) = 47,600 ppm; Cytogenetic analysis (Rodent – hamster Fibroblast) = 40 gm/L
Neurotoxicity: No information found.

12. Ecological Information

Ecotoxicity: LC_{50} Fish: Rainbow trout – 5540 mg/l, 96 h; LC_{50} fish: Bluegill/sunfish – 8300 mg/l, 95 h.
Environmental Fate: Volatilizes, leeches, and biodegrades when released to soil. Terrestrial fate: If released on soil, acetone will not volatilize and leech into the ground. Acetone readily biodegrades and there is evidence suggesting that biodegrades fairly rapidly in soil. Aquatic Fate: If released into water, acetone will probably biodegrade. It is readily biodegradable in screening tests, although data from natural water are lacking. It will also be lost due to volatilization (estimated half life 20 hours from a model river). Adsorption to sediment should not be significant. Atmospheric Fate: In the atmosphere, acetone will be lost by photolysis and reaction with photochemically produced hydroxyl radicals. Half life estimates form these combined processes are 79 and 13 days in January and June, respectively, for an overall annual average of 22 days. Therefore, considerable dispersion should occur. Being miscible in water, wash out by rain should be an important removal process. This process has been confirmed around Lake Shinsei-ko in Japan. There, acetone was found in the air and rain, as well as the lake.
Special Remarks: None

13. Disposal Considerations

Consult local hazardous or chemical waste disposal agency for regulations.

14. Transport Information

TDG (road):	UN Number: UN1090 Class: 3 Proper shipping name: Acetone Packing group: II Additional Information: Flashpoint -20 °C
ICAO/IATA (air):	UN Number: UN1090 Class: 3 Proper shipping name: Acetone Packing group: II
DOT:	UN Number: UN1090

Class: 3
Proper shipping name: Acetone
Packing group: II

15. Regulatory Information

Canadian Regulations:
DSL/NDSL: CAS# 67-64-1 is listed on Canada's DSL list.
WHMIS: This product has a WHMIS classification of B2, D2B. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.
Ingredient Disclosure List: CAS# 67-64-1 is listed on Canada's Ingredient Disclosure List.

US Federal Regulations:
TSCA: CAS# 67-64-1 is listed on the TSCA Inventory.
Health and Safety Reporting List: CAS# 67-64-1 is not listed.
Chemical Test Rules: CAS# 67-64-1 40 CFR 799.5000
Section 12b: CAS# 67-64-1 is not listed.
TSCA Significant New Use Rule: Does not have an SNUR under TSCA.
CERCLA Hazardous Substances: CAS# 67-64-1 – 5000 lb final RQ; 2270 kg final RQ
SARA Section 302: Does not have a TPQ
SARA Codes: CAS# 67-64-1 – immediate, fire
Section 313: Acetone (CAS# 67-64-1) is not subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.
Clean Air Act: CAS# 67-64-1 is not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.
Clean Water Act: CAS# 67-64-1 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.
OSHA: Not considered highly hazardous by OSHA.

US State Regulations:
CAS# 67-64-1 is on the following state right-to-know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts
California Prop 65: California No Significant Risk Level: Not listed

European/International Regulations:
Hazard Symbols: XI; F
Risk Phrases: R11 – Highly Flammable; R36 – Irritating to eyes; R66 – Repeated exposure may case skin dryness and cracking; R67 – Vapors may cause drowsiness and dizziness.
Safety Phrases: S9 – Keep container in 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.
WGK (Water Danger/protection): CAS# 67-64-1: 0

16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses or damages of any third party or for lost profits of any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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