



# Material Safety Data Sheet

**ACETONE**

97883136

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** ACETONE

**OTHER/GENERIC NAMES:** Acetone NF, 2-Propanone, Dimethyl Ketone, Dimethylketal, Dimethylformaldehyde, Pyroacetic acid, Pyroacetic ether.

**PRODUCT USE:** Chemical intermediate

**MANUFACTURER:** AlliedSignal Inc.  
 101 Columbia Road, Box 1139  
 Momstown. New Jersey 07962-1139

FOR MORE INFORMATION CALL:  
 (Monday-Friday, 9:00am-4:30pm)(EST)  
 Product Safety Department: (201)-455-4157

IN CASE OF EMERGENCY CALL:  
 (24 Hours/Day, 7 Days/Week)  
 (201)-455-2000.

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

| INGREDIENT NAME | CAS #  | WEIGHT % |
|-----------------|--------|----------|
| Acetone         | 67-M-1 | 99.7     |

Trace impurities and additional material names not listed above may also appear in the Regulatory Information section (#15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

**3. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** Acetone is a colorless liquid possessing a sweet, pungent odor. It is a volatile substance, extremely flammable and its vapors form explosive mixtures with air. Since acetone vapors travel with air currents, they can be ignited by flames and sparks at locations remote from the site at which the material is being handled. Dangerous fire hazard when exposed to heat, sparks, flame, or oxidants. Eye, skin and mucous membrane irritant. Harmful if swallowed or inhaled.

POTENTIAL HEALTH HAZARDS:

**SKIN:** Prolonged exposure to the vapor irritates the skin. Repeated and prolonged contact of the liquid with skin can cause dryness and erythema (inflammation).

**EYES:** Acetone is an irritant to the eyes and mucous membranes.

**INHALATION:** Vapor concentration of 2,500-3,000 ppm causes minor irritation of eyes, nose and throat. Inhalation at higher concentration may cause headache, nausea, confusion, drowsiness, convulsions and coma.

**INGESTION:** Ingestion of a toxic dose can cause gastroenteric irritation, narcosis and injury to the kidneys and liver.

**DELAYED EFFECTS:** Acetone is not known to produce chronic or cumulative systemic effects.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

| <u>Ingredient Name</u> | <u>NTP Status</u> | <u>IARC Status</u> | <u>OSHA List</u> |
|------------------------|-------------------|--------------------|------------------|
|------------------------|-------------------|--------------------|------------------|

'No ingredients listed in this section'

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#### 4. FIRST AID MEASURES

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**SKIN:** In case of contact with skin, immediately wash skin with soap and water while removing contaminated clothing. Obtain medical attention if defatting action of acetone causes skin cracking or dermatitis.

**EYE:** In case of contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, lifting eyelids occasionally during flushing to facilitate irrigation. Get prompt medical attention.

**INHALATION:** If inhaled, remove the patient from the contaminated atmosphere to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen provided a qualified operator is present. Get prompt medical attention.

**INGESTION:** If swallowed, do not induce vomiting unless advised to do so by a physician. If physician advises vomiting and if patient is conscious, immediately give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Get prompt medical attention.

**ADVICE TO PHYSICIAN:** A. Treatment of severe systemic intoxication (narcosis) from either vapor exposure or ingestion is primarily supportive. Acetone has minimal toxicity on other organ systems and if the victim can be supported through the period of central nervous system depression and respiratory failure, the prognosis is good.

(1) Following recent ingestion, acetone should be removed by emesis (if not performed by rescue personnel) and/or gastric lavage.

(2) Mechanically assisted ventilation may be necessary

(3) In severe cases, an initial period of hypoglycemia may require correction by intravenous solutions of dextrose.

(4) In some cases, transient hyperglycemia—resembling diabetes—has

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occurred during the recovery phase and lasted for a few days. Treatment with insulin may be beneficial but should be used cautiously as the condition tends to resolve over a period of a few days.

B. Eye exposures usually do not require any specific treatment if liquid acetone is promptly washed out of eyes. If exposure was prolonged, some initial corneal damage may be present. It is advisable for these individuals to be seen by an ophthalmologist.

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## 5. FIRE FIGHTING MEASURES

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### FLAMMABLE PROPERTIES:

FLASH POINT: 1.4-F (-17°C)

FLASH POINT METHOD: Tag closed cup.

AUTOIGNITION TEMPERATURE: 869-F (465-C)

UPPER FLAME LIMIT (Volume % in air): 12.8

LOWER FLAME LIMIT (Volume % in air): 2.5

FLAME PROPAGATION RATE (Solids): Not applicable to liquids.

OSHA FLAMMABILITY CLASS: flammable liquid.

### EXTINGUISHING MEDIA:

Small fire: Use carbon dioxide or dry chemical.

Large fire: Use polar solvent (alcohol) type foam. The normal firefighting foams that are suitable for gasoline or hydrocarbon fires will break down and will not extinguish acetone fires. Water spray will reduce the intensity of flames.

Acetone/water solutions have flash points when the acetone concentration is greater than 8% (by weight). The fire point, which is the percent by weight when a solution sustains a flame, is higher than that.

### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Acetone is extremely flammable and its vapors form explosive mixtures with air. Dangerous when exposed to heat, sparks, flame or oxidants.

### SPECIAL FIREFIGHTING PRECAUTIONS/INSTRUCTIONS:

Handle as a very flammable liquid. Use water spray to keep fire-exposed tanks and containers cool. Do not enter the fire area without proper personal protective equipment including self-contained breathing apparatus.

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## 6. ACCIDENTAL RELEASE MEASURES

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**IN CASE OF SPILL OR OTHER RELEASE:** (Always wear recommended personal protective equipment.)  
Eliminate all sources of ignition in the vicinity of spill or released vapors. Isolate the spill area. Permit only trained personnel wearing full personal protective equipment to enter the spill area. Terminate the leak immediately, if possible. Collect the spill in a waste container for disposal. Flush the spill area thoroughly with water; wash contaminated equipment thoroughly with water. Flushings and wash water must be contained and prevented from entering a waterway. Spills of acetone should be reported to Federal, State and Local Environmental Agencies, including the National Response Center (800-424-8802).

Spills and releases may have to be reported to Federal and/or local authorities. See the Regulatory Information section (#15) regarding reporting requirements.

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## 7. HANDLING AND STORAGE

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**NORMAL HANDLING:** (Always wear recommended personal protective equipment.)  
Danger! Extremely flammable. Keep away from heat, sparks and flame. Electrically ground all handling equipment. Keep container closed. Do not use air pressure to unload acetone from container. Use adequate ventilation (see Section 8 on Respiratory Protection).

Observe OSHA regulations on exposure limits. Avoid prolonged or frequently repeated breathing of vapors. Avoid prolonged or repeated contact with skin. Wear safety glasses with cup-type shields or chemical goggles, face shield, natural rubber or neoprene gloves, hard hat and safety shoes in normal handling operations. Whenever handling operations are such that unavoidable gross contact with the liquid is likely, the handler should wear full protective equipment and clothing comprising chemical goggles, face shield, hard hat, and natural rubber or neoprene jacket, trousers, gloves and shoes or boots. Wash contaminated clothing and protective equipment before reuse.

**STORAGE RECOMMENDATIONS:**

Protect container against physical damage. Store in accordance with OSHA Regulation 29 CFR 1910.106 in a cool, well-ventilated location equipped with automatic sprinklers or fire extinguishing system. Keep away from sources of ignition and oxidizing materials.

"Empty" containers, unless thoroughly cleaned, must be assumed to have the same hazards as full ones.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**ENGINEERING CONTROLS:**

Good ventilation is essential in areas where acetone is handled to prevent the accumulation of explosive mixtures. Explosion-proof fans should be used in mechanical type ventilation systems. Under normal conditions, the atmospheric concentration of acetone vapor must be kept low enough to prevent irritation of the mucous membranes and discomfort to the workers. Under abnormal conditions, such as leak, or spills, special emergency equipment may be necessary.

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**PERSONAL PROTECTIVE EQUIPMENT:**

**SKIN PROTECTION:**

**HANDS, ARMS, AND BODY:** Natural rubber or neoprene gloves. Safety shoes and hard hat.

**EYE PROTECTION:**

**EYES AND FACE:**

Liquid contact likely: Wear safety glasses with cup-type side shields or chemical goggles, and face shield.

Vapor contact likely: Wear personal protective equipment described under "respiratory protection".

Contact lenses should not be worn when working with this chemical

**RESPIRATORY PROTECTION:**

No respiratory protection required for concentrations < 750 ppm.

750 to <1,000 ppm: MOSH approved chemical cartridge respirator with organic vapor cartridge.

1,000 to <12,500 ppm: NIOSH approved air purifying full face respirator equipped with organic vapor canister.

12,500 ppm and above: MOSH approved full face supplied air respirator operated in pressure demand or other positive pressure mode.

Escape: NIOSH approved air purifying, full face respirator with organic vapor canister or any escape type self-contained breathing apparatus.

**ADDITIONAL RECOMMENDATIONS:**

**OTHER CLOTHING AND EQUIPMENT:** Natural rubber or neoprene jacket, trousers and shoes or boots. Emergency shower, emergency eye wash fountains and fire blankets. Warning signs. Rubber carrier for glass containers.

**EXPOSURE GUIDELINES:** (Guidelines exist for the following Ingredients)

| <u>Ingredient Name</u> | <u>ACCIH TLV</u>             | <u>OSHA PEL</u>             | <u>Other Limit</u> |
|------------------------|------------------------------|-----------------------------|--------------------|
| Acetone                | 750 ppm TWA<br>1000 ppm STEL | 750 ppm TWA<br>1000 ppm s m | None               |

- Limit established by AlliedSignal for internal use
- Workplace Environmental Exposure Level (AIHA)
- Biological Exposure Index

Other exposure limits for the decomposition products normally associated with product use are as follows:

None.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE Colorless liquid.  
PHYSICAL STATE: Liquid.  
MOLECULAR WEIGHT: 58.08  
CHEMICAL FORMULA:  $\text{CH}_3\text{COCH}_3$   
ODOR: Sweet, pungent odor.  
SPECIFIC GRAVITY: (water = 1.0) 0.79 @ 20/4 °C  
SOLUBILITY IN WATER: (Weight %) Complete.  
pH: Approx. 7 (i.e., 1 vol. acetone in 1 vol. water)  
BOILING POINT: 56.2-c  
MELTING POINT: -95.35-c  
VAPOR PRESSURE: 181 mm Hg @ 20 °C  
VAPOR DENSITY: (Air = 1.0) 2.0  
EVAPORATION RATE: Z-7.0 Compared to: Butyl acetate = 1  
% VOLATILES: Approx. 100% (by volume at 20 °C)  
FLASH POINT: 1.4-F (-17-C)  
(Flash point method and additional flammability data are found in section 5.)

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## 10. STABILITY AND REACTIVITY

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NORMALLY STABLE? (Conditions to Avoid)  
Normally stable. Keep away from heat, sparks and flame.

INCOMPATIBILITIES:  
Avoid strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:  
Complete combustion results in the formation of carbon dioxide and water vapor. Incomplete combustion can yield carbon monoxide.

HAZARDOUS POLYMERIZATION?  
Hazardous polymerization will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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IMMEDIATE (ACUTE) EFFECTS:  
Oral (mouse)  $\text{LD}_{50}$  = 3,000 mg/kg  
Oral (rat) LD<sub>50</sub> = 5,800 mg/kg  
Oral (rabbit)  $\text{LD}_{50}$  = 5,340 mg/kg  
Eye (human) = 500 ppm  
Skin (rabbit) 500 mg/24 hr. Reaction mild

DELAYED (SUBCHRONIC & CHRONIC) EFFECTS:  
No data available. Acetone is not known to produce chronic or cumulative systemic effects

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**OTHER DATA:**

BIOLOGICAL ACTION LEVEL: 270 mg/L in urine at end of work shift = excessive exposure to acetone.

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**12. ECOLOGICAL INFORMATION**

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**DEGRADABILITY:**

- a) Biochemical Oxygen Demand (BOD5 Lb./Lb.; acclimated bacteria): 0.31 - 1.63
- b) Chemical Oxygen Demand (COD Lb./Lb.): 1.12 - 2.07.

OCTANOL/WATER PARTITION COEFFICIENT: 0.58.

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**13. DISPOSAL CONSIDERATIONS**

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**RCRA:**

Is the unused product a RCRA hazardous waste if discarded? Yes.  
If yes, the RCRA ID number is: U002 and D001

**OTHER DISPOSAL CONSIDERATIONS:** The waste material should be treated and/or disposed of at a site authorized to handle hazardous chemical waste. Appropriate Federal, State and Local Regulatory Authorities should be contacted before discharge, treatment or disposal of waste material.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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**14. TRANSPORT INFORMATION**

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US DOT HAZARD CLASS: Class 3 - Flammable Liquid. Packing Group II

US DOT ID NUMBER: UN 1090

For additional information on shipping regulations affecting this material, contact the information number found on the first page.

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**15. REGULATORY INFORMATION**

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**TOXIC SUBSTANCES CONTROL ACT (TSCA):**

**TSCA INVENTORY STATUS:** Acetone is listed on the TSCA inventory.

**OTHER TSCA ISSUES:** Subject to export notification.

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**SARA TITLE III/CERCLA:**

**RQs & TPQs:**

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

| <u>Ingredient</u> | <u>SARA/CERCLA<br/>RQ(lbs)</u> | <u>SARA EHS<br/>TPQ(lbs)</u> |
|-------------------|--------------------------------|------------------------------|
| Acetone           | 5000                           | None                         |

Spills/releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Fiie.

**SARA 313 TOXIC CHEMICALS:**

The following ingredients are SARA 313 "Toxic Chemicals". CAS t's and wt.% are found in section #2.

| <u>Ingredient</u>                       | <u>Comment</u> |
|---|----------------|
| 'No ingredients listed in this section' |                |

**STATE RIGHT TO KNOW:**

In addition to the ingredients found in section 2, the following are listed for state right-to-know purposes:

| <u>Ingredient</u>                       | <u>Wt.%</u> | <u>Comment</u> |
|---|-------------|----------------|
| 'No ingredients listed in this section' |             |                |

**ADDITIONAL REGULATORY INFORMATION:**

Acetone is subject to the Chemical Diversion & Trafficking Act of 1988 and subject to certain record keeping and reporting requirements. (21 CFR 1310 and 1313).  
 Acetone is not regulated as a VOC under the Clean Air Act.  
 Acetone is not On the California Prop 65 List.

**WHMIS CLASSIFICATION (CANADA):**

Class B, Division 2

**FOREIGN INVENTORY STATUS:**

- Canadian DSL (Domestic Substances List)
- EINECS (European Inventory of Existing Commercial Chemical Substances)
- Australian Inventory
- Japanese Inventory

**1b. OTHER INFORMATION**

CURRENT ISSUE DATE: July, 199s  
 PREVIOUS ISSUE DATE: September, 1593

**CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:**

- Change made to Emergency Overview (Section 3)
- Added information to Extinguishing Media (Section 5)
- Changes to Regulatory Information (Section 15)
  - Deleted from SARA 313 list
  - Additional Regulatory Information added
  - Foreign Inventory Status-Added Japanese and Australian Inventory status

OTHER INFORMATION: NFPA HAZARD RATINGS: 1-3-0 (H-F-R)  
 HMIS HAZARD RATINGS: 1-4-0 (H-F-R)