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megaloid.ca



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1. PRODUCT IDENTIFICATION

Name: *Acetone*

Synonyms: *2-propanone; dimethyl ketone, dimethyl formaldehyde, pyroacetic acid*


CAS# 67-64-1

Product Uses: *Fast evaporating solvent in coatings & adhesives; solvent in the manufacture of pharmaceuticals, vitamins and cosmetics; chemical intermediate; reagent.*

Supplier Identifier: *Megaloid Laboratories Limited
5515 North Service Road, Ste 306
Burlington, Ontario, Canada
L7L 6G4
Ph: 905-337-7411, Fax: 905-337-1686*

EMERGENCY INFORMATION Call CHEMTREC - (800) 424-9300 (CCN# 693764)

2. HAZARDS

GHS Class <i>(category)</i>	Flammable <i>(2)</i>	Eye irritant <i>(2A)</i>	STOT <i>(3)</i>	Hazardous Pictograms 
Signal Word	DANGER			
Hazard Statements	<i>highly flammable liquid & vapour (H225)</i>	<i>Causes serious eye irritation (H319)</i>	<i>May cause dizziness or drowsiness (H336)</i>	

GHS Precautionary Statements for Labelling

Prevention:	
P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P233	Keep container tightly closed
P240	Ground or bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260+P262	Do not breathe vapours. Do not get in eyes.
P280	Wear eye protection, protective gloves and clothing of butyl rubber

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Response:	
P370+P378	In case of fire use alcohol-resistant foam to extinguish.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	If in eyes, rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P304+P340	If inhaled remove person to fresh air and keep comfortable for breathing.
Storage:	
P403+P235	Store in a well-ventilated place. Keep cool.
Disposal:	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
Acetone	67-64-1	100	EC # 200-662-2

4. FIRST AID

Inhalation

Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.

Skin Contact

Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

Eye Contact

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.

Ingestion

Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

First-aid Comments

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. FIRE FIGHTING & FLAMMABILITY

Extinguishing Media

Suitable Extinguishing Media

Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames

Combustion Products

carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments

Special Protective Equipment and Precautions for Fire-fighters

Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

6. ACCIDENTAL RELEASE MEASURES

Serious Fire Potential:

blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof.

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Handling Spill: Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal.

Other Information

Report spills to local health, safety and environmental authorities, as required.

7. HANDLING & STORAGE

Precautions for Safe Handling

This is an extremely flammable and toxic liquid. Store in a cool, well ventilated environment, away from sources of ignition, heat & substances named in Part 10. Do not store in direct sun – heating may pressurize drums! Always use non-sparking bronze or aluminum hand tools. All electrical & mechanical equipment (including lighting, switchgear & forklift trucks) used with or around this product must be explosion-proof.

Although Acetone cannot retain a static charge, it is extremely flammable.

Always ground or electrically bond the source container, receiving container & transfer pump before transferring contents. Never transfer by pressurising containers with air! Nitrogen or carbon dioxide pressurization – after flushing air from the headspace – is acceptable.

Avoid splashing by keeping the product nozzle below the surface in the receiving container. Empty containers may contain a flammable/explosive vapour. Always ensure that containers, whether empty or full, are tightly sealed unless in use.

Bulk storage tanks have a potential for material to form an ignitable vapour-air mixture inside. Bulk storage tank vents should have flame arrestors.

Avoid breathing product vapour. Use with adequate ventilation. If dealing with a spill & ventilation is impossible or impractical, wear a suitable respirator with an organic vapour canister.

Never cut, drill, weld or grind on or near this container. Avoid contact with skin & wash work clothes frequently. An eye bath must be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV 500ppm / 1187mg/m³
 ACGIH TLV 500ppm / 1187mg/m³
 OSHA PEL 750ppm / 1780mg/m³

Ontario STEV 750ppm / 1780mg/m³
 ACGIH STEL 750ppm / 1780mg/m³
 OSHA STEL 1000ppm / 2400mg/m³

Ventilation	<i>Mechanical ventilation may be required to control airborne titre</i>
Hands	<i>Butyl rubber gloves recommended– other types also protect; confirm suitability with supplier</i>
Eyes	<i>Safety glasses with side shields – always protect the eyes</i>
Clothing	<i>Wear chemical protective clothing e.g. gloves, aprons, boots. Nitrile rubber, Viton®.</i>

Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground. Provide eyewash and safety shower if contact or splash hazard exists.

9. PHYSICAL PROPERTIES

Appearance	<i>Clear colourless liquid.</i>
Odour	<i>Sharp ketone (nail polish remover) odour (Acetone)</i>
Odour threshold	<i>~ 66 ppm (156.2 mg/m³) (Acetone)</i>
Ph	<i>Neutral</i>
Melting Point/Freezing Point	<i>-95°C (-139°F) (freezing)</i>
Initial Boiling Point/Range	<i>56 °C (133°F) (closed cup)</i>
Flash Point	<i>20 °C (68 °F) (closed cup)</i>
Evaporation Rate	<i>5.6 (n-butyl acetate = 1)</i>
Flammability (Solid, Gas)	<i>Not Available</i>
Upper/Lower Flammability or Explosive Limit	<i>12.8% (upper); 2.5% (lower)</i>
Vapour Pressure	<i>185 mm Hg 925 kPa) at 20°C (68 °F)</i>
Vapour Density (air = 1)	<i>2</i>
Relative Density (water = 1)	<i>Not Available</i>
Solubility	<i>Soluble in water; Highly soluble in common organic solvents.</i>
Partition Coefficient, n-Octanol/Water (Log Kow)	<i>-0.24</i>

Auto-ignition Temperature	465 °C (869 °F)
Decomposition Temperature	Not Available
Viscosity	-0.32 centistrokes at 25 °C (77 °F) (kinematic)
Physical State	Liquid
Molecular Weight	58 grams per mole
Vapour Pressure at 50 °C	800 kPa (6000 mm Hg)

10. REACTIVITY

Dangerously Reactive with strong oxidising agents; strong reducing agents; hexachloromelamine or trichloromelamine; nitric acid & acetic acid mixture explodes with acetone; ignites on contact with activated carbon. Also Reactive with (explosive peroxides may form with): hydrogen peroxide or isoprene or combination of alkalies & chlorinated solvents; attacks PVC, ABS & some elastomers (check materials for acetone resistance)

Chemical Stability

Normally stable. Prolonged exposure to sunlight may result in carbon monoxide formation.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Sunlight. Attacks PVC & ABS & some elastomers.

Incompatible Materials

Reacts explosively with: hydrogen Peroxide or isoprene or combination of alkalies & chlorinated solvents.

11. TOXICITY

Prolonged exposure may cause dermatitis; systemic effects of prolonged inhalation are minor & subtle.

Acute Toxicity	
LD₅₀ (oral)	5240, 5800, 6700 & 97501mg/kg (rat), 5340 & 5600-8000mg/kg (rabbit), 3000 & 5245mg/kg (mouse)
LD₅₀ (skin)	>15,800mg/kg (rabbit), 7400mg/kg (guinea pig)
LC₅₀ (inhalation)	21,000 & 30,000ppm (rat), 18,600ppm (mouse) – very low toxicity by inhalation

Skin Corrosion/Irritation

Animal tests show mild irritation. Irritating if contact is prolonged.

Serious Eye Damage/Irritation

Vapour slightly irritating at 500ppm; very irritating at 1000ppm; liquid severely irritating.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Irritating above 250ppm; very irritating above 1000ppm; 2000ppm causes dizziness, intoxication, nausea, vomiting; 10,000ppm is life threatening.

Skin Absorption

Yes; no toxic effects likely by this route except possibly in very young children.

Ingestion

Irritating to mouth & throat; dizziness, intoxication, nausea.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Do not breathe vapours. If inhaled remove person to fresh air and keep comfortable for breathing.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer.

Carcinogenicity

Not a carcinogen. ACGIH®: A5 – Not suspected as a human carcinogen.

Key to Abbreviations: ACGIH® = American Conference of Governmental Industrial Hygienists.

Reproductive Toxicity**Sexual Function and Fertility**

No known effect in animals; one human study suggested sperm abnormality may occur on prolonged exposure, but simultaneous exposure to styrene makes acetone's contribution impossible to ascertain.

Germ Cell Mutagenicity

Not known to be a mutagen.

12. ECOLOGICAL INFORMATION

Bioaccumulation	<i>rapidly excreted and/or metabolised by all living creatures; cannot bioaccumulate</i>
Persistence and Degradability	<i>Biodegradation - biodegrades readily & rapidly in the presence of oxygen; 76% & 84% in 20 days, >90% in 28 days Abiotic Degradation - reacts slowly with atmospheric hydroxyl radicals; estimated 1/2-life in air is ~80 day</i>
Mobility in soil, water	<i>Acetone moves readily in soil & water; volatilisation is rapid, mitigating mobility</i>
Aquatic Toxicity	
LC50 (Fish, 96hr)	<i>11,000mg/litre (Alburnus alburnus), 6210-8120mg/litre (Pimephales promelas), 5540mg/litre (Salmo gairdneri)</i>
EC50 (Crustacea, 48hr)	<i>7635mg/litre (Daphnia cucullata), 12,600mg/litre (Daphnia magna), 8800mg/litre (Daphnia pulex), 16,700mg/litre (Nitocra spinipes, 96hr)</i>
EC50 (Algae, 14 day)	<i>2844mg/litre (Anabena cylindrica), 21,725mg/litre (Anabena inaequalis), 29,151mg/litre (Anabena variabilis), 11,798mg/litre (Skeletonema costatum – 5 days)</i>
EC50 (Bacteria)	<i>59-67mg/litre ("domestic activated sewage sludge"), 14,500mg/litre (Photobacterium phosphoreum)</i>

13. DISPOSAL**Waste Disposal**

Do not flush to sewer, recycle solvent if possible, local regulations may permit disposal in sanitary landfill, may be incinerated in approved facility after mixing with a suitable flammable waste


Containers

Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.

Pails must be vented and thoroughly dried prior to crushing and recycling.
IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs).
Steel containers must be inspected, pressure tested & recertified every 5 years.

Never cut, drill, weld or grind on or near this container, even if empty

14. TRANSPORT CLASSIFICATION

Canada TDG	PIN	UN1090	
AND	Shipping Name	Acetone	
U.S.A. 49 CFR	Class & Packing Group	3, PG II	
Marine Pollutant ERAP Required Reportable Quantity E R G No.	Not a Marine Pollutant NO 5,000 lbs (2,270kg) 127		

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

15. REGULATIONS

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

U.S.A. Regulations

Immediately Dangerous to Life or Health: 2500 ppm (IDLH based on a 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.)

Allowable Tolerances: Residues of acetone are exempted from the requirement of a tolerance when used as a solvent, cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 1000 ppm (2400 mg/cu m). Vacated 1989 OSHA PEL TWA 750 ppm (1800 mg/cu m); STEL 1000 ppm (2400 mg/cu m) is still enforced in some states.

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 250 ppm (590 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 500 ppm; 15 min Short Term Exposure Limit (STEL): 750 ppm. A4; Not classifiable as a human carcinogen. Biological Exposure Index (BEI): Determinant: acetone in urine; Sampling Time: end of shift; BEI: 50 mg/L. The determinant is nonspecific, since it is also observed after exposure to other chemicals.

Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non-air quality health and environmental

impact and energy requirements. Acetone is produced, as an intermediate or a final product, by process units covered under this subpart.

State Drinking Water Guidelines: Florida 700 ug/l; Massachusetts 6,300 ug/L; Maine 6,300 ug/l; Minnesota 700 ug/l; New Hampshire 6,000 ug/L; Wisconsin 1000 ug/l.

CERCLA Reportable Quantities: Persons in charge of vessels or facilities are required to notify the National Response Centre (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5000 lb or 2270 kg. The toll free number of the NRC is (800) 424-8802. The rule for determining when notification is required is in 40 CFR 302.4 (section IV. D.3.b).

RCRA Requirements: F003; When acetone is a spent solvent, it is classified as a hazardous waste from a nonspecific source (F003), as stated in 40 CFR 261.31, and must be managed according to State and/or Federal hazardous waste regulations. U002; As stipulated in 40 CFR 261.33, when acetone, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to Federal and/or State hazardous waste regulations. Also defined as a hazardous waste is any residue, contaminated soil, water, or other debris resulting from the cleanup of a spill, into water or on dry land, of this waste. Generators of small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5).

FIFRA Requirements: Residues of acetone are exempted from the requirement of a tolerance when used as a solvent, cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA '88 were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D pesticides of less concern. Acetone is found on List D. Case No: 4002; Case Status: No products containing the pesticide are actively registered. Therefore, we are characterizing the case as "cancelled." Under FIFRA, pesticide producers may voluntarily cancel their registered products. EPA also may cancel pesticide registrations if registrants fail to pay required fees or make/meet certain reregistration commitments, or if EPA reaches findings of unreasonable adverse effects; Active ingredient (AI): acetone; AI Status: The active ingredient is no longer contained in any registered products. Thus, we characterize it as "cancelled."

FDA Requirements: A tolerance of 30 parts per million is established for acetone in spice oleoresins when present therein as a residue from the extraction of spice. Acetone is an indirect food additive for use only as a component of adhesives. Drug products containing certain active ingredients offered over-the-counter (OTC) for certain uses. A number of active ingredients have been present in OTC drug products for various uses, as described below. However, based on evidence currently available, there are inadequate data to establish general recognition of the safety and effectiveness of these ingredients for the specified uses: acetone is included in skin protectant drug products.

16. OTHER INFORMATION

NFPA RATING	Health 1	Flammability 3	Instability 0
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Prepared for Megaloid Laboratories Limited **by** Richard Koscher

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Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
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