

1 Identification

Product identifier

Trade name: 634A3 - Acetone

Recommended use and restrictions on use

General use: Solvent
Reserved for industrial and professional use.

Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA
Canada

WWW: www.ottobock.ca

Email: info.canada@ottobock.com

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency telephone number

COLLECT, Telephone: (613) 996-6666

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2 Hazard identification

Classification

Flammable Liquid 2

Highly flammable liquid and vapour.

Eye Irritation 2A

Causes serious eye irritation.

Specific Target Organ Toxicity (Single Exposure) 3 May cause drowsiness or dizziness.

Information elements

Symbols:



Signal word:

Danger

Hazard statements:

Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Take precautionary measures against static discharge.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container to hazardous or special waste collection point.

Other hazards known to the supplier with respect to the product

vapours are moderately irritating to the mucous membranes.

Higher doses may have a narcotic effect. Danger of metabolic acidosis.

After ingestion: Gastric and intestinal problems.

Other symptoms: Headache, dizziness, nausea, unconsciousness.

3 Composition/Information on ingredients

Material/substance

Chemical name: C3 H6 O = H3C-CO-CH3
Acetone, Dimethyl ketone, 2-Propanone, Methyl ketone
CAS-Number: 67-64-1

4 First-aid measures

Description of necessary first-aid measures

General information: Move victim to fresh air, put at rest and loosen restrictive clothing. Do not allow victim to become chilled. Keep victim warm.
If victim is at risk of losing consciousness, position and transport on their side. Call a physician immediately.

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing.
If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Immediately get medical attention.

In case of swallowing: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Give activated carbon, in order to reduce the resorption in the gastro-enteric tract.

In case of skin contact: Immediately remove any wetted clothing, shoes or stockings. After contact with skin, wash immediately with soap and plenty of water. Follow up by applying skin cream.
In case of skin irritation, consult a physician.

In case of eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist.

Most important symptoms and effects, whether acute or delayed

Burning eyes and skin. fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation:

For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin:

Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.

No indication for sensitising properties in humans.

After eye contact: Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed, if necessary

Combat acidosis. Monitor alkali reserves. Monitor breathing.

If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen.

Attention: several hours latency period. In severe cases, pneumonia or a pulmonary edema may develop.

5 Fire-fighting measures

Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Extinguishing powder, alcohol resistant foam, carbon dioxide, water spray jet

Unsuitable extinguishing media:

Full water jet

Specific hazards arising from the product

Highly flammable liquid and vapour.

Explosive mixtures with air may even form at room temperature. Beware of reignition.

In case of fire may be liberated: Carbon monoxide and carbon dioxide.

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Heating will lead to pressure increase: danger of bursting and explosion. Use fine water spray to cool endangered containers.

Move undamaged containers from immediate hazard area if it can be done safely.

Do not allow fire water to penetrate into surface or ground water.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

Fire class: B

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54 °C.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Remove persons not involved upwind.
Wear a self-contained breathing apparatus and chemical protective clothing.
Solvent-resistant protective clothing recommended.

Environmental precautions:

Plug leak if safely possible.
Do not allow to enter drains, surface waters, basements or pits.
When released into the environment, alert police and fire brigade.
Seal all low level rooms. Danger of explosion!

Methods and material for containment and cleaning up

In case of spills of large quantities: Dam spills and pump to remove. Explosion protection required.

Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal.

Flowing water: Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state, and federal spill reporting authorities.

Standing water: Seal off. Remove all sources of ignition.

Additional information:

vapours spread at floor level. Cover drainage holes and evacuate basement. Dilute with plenty of water. Use only explosion-protected equipment/instruments.

Liquid: Very highly flammable. Liquid evaporates very quickly.

vapours: Very highly flammable.

vapours form potentially explosive mixtures with air, which are heavier than air. Air-vapour mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source. Ignition by hot surfaces, sparks and open flames.

Solubility in water: complete

Mixtures with 4% acetone mixed with 96% water still have a flash point of 54 °C. In case of important spills, risk of ignition of the acetone-water mixture. Potentially explosive mixtures with air may form above water surface.

7 Handling and storage

Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Provide room air exhaust at ground level. Concentrated vapours are heavier than air.
Avoid the formation of aerosol. Do not breathe vapours. Avoid contact with skin and eyes.
Wear appropriate protective equipment.
Use only explosion-protected equipment/instruments. Do not use air pressure.

Precautions against fire and explosion:

Exposure to temperatures exceeding 50 °C will increase pressure: resulting in danger of bursting or explosion.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharges. Beware of reignition.

Potentially explosive mixture may form within partially empty containers.

Emergency cooling must be provided for in case of a fire in the vicinity.

Do not weld.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.

Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked.

Unsuitable container/equipment material: May attack plastics.

Make sure spills can be contained, e.g. in sump pallets or kerbed areas.

Hints on joint storage:

Do not store together with combustible or self-igniting materials or any highly flammable solids.

Peroxide may form when product is exposed to light and air.

Further details:

Potentially explosive mixture may form within partially empty containers.

For outdoor storage: Use only equipment approved for use in 1 zone.

For indoor storage: Use only equipment approved for use in 2 zone.

8 Exposure controls/Personal protection

Control parameters

Occupational exposure limit values:

Type	Limit value
Canada: Alberta, OEL 15 min	1,800 mg/m ³ ; 750 ppm
Canada: Alberta, OEL 8 hour	1,200 mg/m ³ ; 500 ppm
Canada: BC, OEL STEL	500 ppm
Canada: BC, OEL TWA	250 ppm
Canada: Québec, VECD	500 ppm
Canada: Québec, VEMP	250 ppm

Biological limit values:

Type	Limit value	Parameter	Material	Time of sampling
USA: ACGIH-BEI	25 mg/L	acetone	urine	end of exposure or end of shift

Appropriate engineering controls

Explosion protection required. Provide good ventilation and/or an exhaust system in the work area.

Individual protection measures, such as personal protective equipment

Respiratory protection:

Use filter type AX (= against vapours of low boiling organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Have a breathing apparatus that is not dependent on the circulating air ready for emergencies.

Hand protection:

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Glove material: Butyl caoutchouc (butyl rubber) - Layer thickness >= 0.5 mm.

Breakthrough time: >480 min.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Use solvent-resistant protective clothing.
Recommendation: Flame-retardant protective clothing, antistatic.
safety shoes according to EN 345-347.

General hygiene considerations:
Keep away from heat sources, sparks and open flames. Take precautionary measures against static discharges.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
Wash hands before breaks and after work.
Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9 Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	Form: liquid
Colour:	colourless, clear
Odour:	sweetish, aromatic
Odour threshold:	47.5 mg/m ³
Melting point and freezing point:	-94.7 °C
Boiling point or initial boiling point and boiling range:	56.05 °C
Flammability:	Highly flammable liquid and vapour.
Lower and upper explosion limit or lower and upper flammability limit:	LEL (Lower Explosion Limit): 2.50 Vol-% UEL (Upper Explosive Limit): 14.30 Vol-%
Flash point/flash point range:	-17 °C (c.c.)
Evaporation rate:	No data available
Auto-ignition temperature:	465 °C (Inflammation group G1)
Decomposition temperature:	none
pH:	at 10 g/L: neutral; 50% in H ₂ O: 5-6
Dynamic viscosity:	at 20 °C: 0.32 mPa*s
Solubility:	at 20 °C: in organic solvents 100 %
Water solubility:	at 20 °C: multimiscible
Partition coefficient — n-octanol/water:	-0.24 log P(o/w) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 240 hPa at 50 °C: 800 hPa
Density and/or relative density	at 20 °C: 0.79 g/mL
Vapour density:	2.1
Particle characteristics:	Not applicable

Additional information

Explosive properties: Explosion category 1; Explosion group II A
Oxidizing characteristics: Highly flammable liquid and vapour.
Ignition temperature: 465 °C (Inflammation group G1)

Refraction index: at 20 °C: 1.358 - 1.359

Additional information: Molar mass: 58.09 g/mol
Dissociation constant: pKa = 24.2 at 25°C
Evaporation rate: 2.0 (ether = 1)
Evaporation rate: 5.6 (n-BuAc = 1)
Saturation concentration at 20 °C: 550 g/m³

10 Stability and reactivity

Reactivity: Acetone reacts in presence of bases.
vapours form potentially explosive mixtures with air, which are heavier than air. Air-vapour mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source. May become electrostatically charged.

Chemical stability: Product is stable under normal storage conditions.

Possibility of hazardous reactions: No hazardous reactions known.

Conditions to avoid: Highly flammable. Concentrated vapours are heavier than air.
Take precautionary measures against static discharges.
Forms explosive mixtures with air, also in empty, uncleaned containers.
May produce, when being mixed with chloridized hydrocarbons and exposed to light, strongly irritating chloric acetone.

Incompatible materials: Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur.
Avoid contact with strong oxidizing agents, alkalis and amines.

Hazardous decomposition products: In case of fire may be liberated: Carbon monoxide and carbon dioxide.

11 Toxicological information

Information on the likely routes of exposure

No data available

Health hazard information

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Specific symptoms in animal studies (guinea pig): Does not cause irritation.

Serious eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation.

Specific symptoms in animal studies (Rabbit): irritant (OECD 405)

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Sensitisation: Specific symptoms in animal studies (guinea pig): not sensitising (OECD 406)

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

not mutagenic in bacterial mutagenicity (OECD 471)

Chromosomal aberrations, in-vitro (OECD 473): negative

Gene-mutations mammalian cells, in-vitro (OECD 476): negative

Micronucleus test in-vivo Mouse/hamster (non-Guideline): negative

Carcinogenicity: Based on available data, the classification criteria are not met.

Not carcinogenic at long term exposure (Mouse, dermal).

Reproductive toxicity: Based on available data, the classification criteria are not met.

Effects on fertility: No impairment of reproductive performance in animal experiments.

developmental toxicity: None developmental toxicity (inhalation at Rat, Mouse, OECD 414).

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) 3 = May cause drowsiness or dizziness. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

NOAEL Rat, oral: 900 mg/kg/90d bw/d

NOAEC Rat, inhalative: 22500 mg/m³/8w

Aspiration hazard: Based on available data, the classification criteria are not met.

Acute toxicity:

LD50 Rat, oral: 5,800 mg/kg bw (OECD 401)

LD50 Rat, dermal: > 15,800 mg/kg bw

LC50 Rat, inhalative: 76 mg/L/4h

Other information:

Short term effect: 10,000 ppm were well-tolerated.

No symptoms did appear after 30 to 60 minutes.

Symptoms

Burning eyes and skin. fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation:

For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin:

Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.

No indication for sensitising properties in humans.

After eye contact: Causes serious eye irritation.

12 Ecological information

Ecotoxicity

Aquatic toxicity:

Acute effects:

Fish toxicity:

- freshwater species: 96h LC50 (Oncorhynchus mykiss): 5,540 mg/L
- marine species: 96h LC50 (Alburnus alburnus (alburnus)): 11,000 mg/L

Invertebrate toxicity:

- freshwater species: 48h EC50 (Daphnia pulex (water flea)): 8,800 mg/L
- marine species: 24h EC50 (Artemisia salina): 2,100 mg/l

Algae toxicity:

- freshwater species: 8h NOEC (Microcystis aeruginosa): 530 mg/L/8 d.
- marine species: 96h NOEC (Prorocentrum minimum): 430 mg/L

Bacterial toxicity:

EC 12: (30 min; activated sludge; OECD 209): 1,000 mg/L

Long-term effects:

Chronic (long-term) toxicity to aquatic invertebrates:

28-days NOEC (Daphnia pulex (water flea); reproduction: 2,212 mg/L

No information on long-term effects of fish and algae available.

Long-term effects on aquatic organisms are not relevant due to the rapid elimination in water.

Effects in sewage plants: In activated sludge: 100 %/ 4 d (anaerobic conditions; Warburg Respirometer)

Persistence and degradability

Further details:

Abiotic degradation:

DT50, 19 - 114 d (Air, Indirect photodegradation by reaction with OH radicals.)

Abiotic degradation: none (Water, hydrolysis)

Biodegradation: 91 %/28 d (OECD 301B).

ThOD 84 %/5 d. (BOD5, APHA 219).

COD: 2.21 g O2/g

Product is readily biodegradable.

Bioaccumulative potential

Bioconcentration factor (BCF):

3 (calculated, BCFWIN v2.17)

Mobility in soil

Adsorption coefficient soil (Kd) : 1.5 L/kg, at 20 °C.

The soil sorption coefficient indicates that acetone is mobile in soil and may be transported by soil water.

Volatility:

Henry constant: 2.929 - 3.070 Pa*m³/mol (25 °C water).

Henry constant: 3.311 Pa*m³/mol (25 °C marine water).

Experimentally determined Henry's Law constants indicate a moderate volatility from water.

Other adverse effects

General information:

Terrestrial toxicity:

48h LD50 (Eisenia fetida): 0.1 - 1 mg/cm³

48h LD50 (Ambystoma mexicanum): 20,000 mg/L

48h LD50 (Xenopus laevis): 24,000 mg/L

In a study conducted according to OECD Guideline 207 (Earthworm, Acute Toxicity Tests: filter paper contact test), acetone showed a moderate toxicity to Eisenia fetida. In further short term toxicity studies, Ambystoma mexicanum and Xenopus laevis larvae exposed to acetone under static conditions in covered glass basins showed 48h LC50 values of 20,000 mg/L and 24,000 mg/L, respectively.

Do not allow to enter into ground-water, surface water or drains.

13 Disposal considerations

Waste treatment methods

Product

Recommendation:

Incinerate as hazardous waste according to applicable local, state, and federal regulations.
Do not dispose of with household waste.
Do not empty into drains.

Package

Recommendation:

Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

14 Transport information

UN number

TDG:

UN1090

IMDG, IATA-DGR:

UN 1090

UN proper shipping name

TDG:

UN 1090, Acetone

IMDG, IATA-DGR:

UN 1090, ACETONE

Transport hazard class

TDG: 3
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3



Packing group

TDG, IMDG, IATA-DGR: II

Environmental hazards

Marine pollutant: no

Special precautions in connection with transport or conveyance either within or outside the premises

Canada: Transportation of Dangerous Goods (TDG)

Explosive limit and limited quantity index: 1L
Passenger carrying ship index: Forbidden
Passenger carrying road or rail index: 5L

Sea transport (IMDG)

EmS: F-E, S-D
Special Provisions: -
Limited quantities: 1 L
Excepted quantities: E2
Package - Instructions: P001
Package - Provisions: -
IBC - Instructions: IBC02
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T4
Tank instructions - Provisions: TP1
Stowage and handling: Category E.
Properties and observations: Colourless, clear liquid, with a characteristic mint-like odour. Flashpoint: -20°C to -18°C c.c. Explosive limits: 2.5% to 13%. Miscible with water.
Marine pollutant: no
Segregation group: none

Air transport (IATA)

Proper shipping name: UN 1090, ACETONE
Hazard label: Flamm. liquid
Excepted Quantity Code: E2
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Emergency Response Guide-Code (ERG): 3H

15 Regulatory information

National regulations - Canada

DSL: listed

CAS 67-64-1 is listed on Canada's DSL and Ingredient Disclosure Lists.

Classification: B2, D2B

Further regulations, limitations and legal requirements

No data available

16 Other information

Revision date: 17/12/2025

Date of first version: 6/9/1989

Reason of change: General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022
General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

Abbreviations and acronyms:

AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
COD: Chemical Oxygen Demand
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
DSL: Domestic Substances List
EC: Effective Concentration
EC: European Community
EC50: Effective Concentration 50%
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
EN: European Standard
EQ: Excepted quantities
Eye Irritation: Eye irritation
Flammable Liquid: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
IMO: International Maritime Organization
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
MFSU: Manufacture, formulation, supply and use
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
STOT SE: Specific target organ toxicity - single exposure
TDG: Transportation of Dangerous Goods Regulation in Canada
ThOD: Theoretical Oxygen Demand
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
VOC: Volatile Organic Compounds
vPvB: Very persistent and very bioaccumulative

Literature: REACH Registration Dossier Acetone. P&D-REACH Consortium, 2010.
ICSC 0087

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.