

ACETONE

ChemWatch Review SDS

Chemwatch: 1090

Version No: 5.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 03/09/2020

Print Date: 22/02/2021

S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

| | |
|-------------------------------|--|
| Product name | ACETONE |
| Chemical Name | acetone |
| Synonyms | C3-H6-O; CH ₃ COCH ₃ ; propanone; pyroacetic acid; pyroacetic ether; 2-propanone; beta-ketopropane; methyl ketone; propan-2-one; dimethyl ketone; ketone, dimethyl ketone propane; dimethyl formaldehyde; RF Services; RCRA Waste No. U002; EM000739; APS RETL00020006 UCH00002546 RDEH06009000; SPOL00000585 AR0000006 UL0000007 M&B00004946; Ashland Acetone ECD Mobil 878033 971934; J.T.Baker Chem-Supply; Product code: 11831; 101404: DAVID CRAIG ACETONE 500ML; 101405: DAVID CRAIG ACETONE 100ML |
| Proper shipping name | Acetone |
| Chemical formula | CH ₃ COCH ₃ |
| Other means of identification | Not Available |
| CAS number | 67-64-1 |

Recommended use of the chemical and restrictions on use

| | |
|--------------------------|--|
| Relevant identified uses | Solvent for fats, oils, waxes, resins, rubber, plastics, lacquers. Used in manufacture of methyl isobutyl ketone, mesityl oxide, acetic acid, diacetone alcohol, isoprene. Used in solvent extraction processes. Solvent in the manufacture of explosives and rayon. |
|--------------------------|--|

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | Huntsman | Peak Lubricants | Australian Biostain |
|-------------------------|---|--|---|
| Address | PO Box 62 Footscray West VIC 3012 Australia | 224-230 South Gippsland Highway Dandenong VIC 3175 Australia | PO Box 1407 Traralgon VIC 3844 Australia |
| Telephone | +61 3 9316 3333 | +61 3 9799 0977 | +61 3 5176 2855 |
| Fax | +61 3 9316 3644 | +61 3 9799 7709 | Not Available |
| Website | Not Available | Not Available | http://www.australianbiostain.com.au/all.asp |
| Email | customer_service@huntsman.com | enquiries@qmiaustralia.com.au | enquiries@australianbiostain.com.au |

| Registered company name | Gladstone Chemicals | Boeing Distribution Services Pty Ltd | Merck |
|-------------------------|---|--|---|
| Address | Kororoit Creek Road Altona VIC 3018 Australia | 17 Ashtan Place QLD 4014 Australia | Darmstadt D-64271 Germany |
| Telephone | +61 3 9369 7888 | +61 7 3292 5200 | +49 6151 72 0 |
| Fax | Not Available | +61 7 3292 5220 | +49 6151 72-2000 |
| Website | Not Available | www.boeingdistribution.com | http://www.merck.de/servlet/PB/menu/1487230/index.html |
| Email | Not Available | australia@boeingdistribution.com | service@merck.de |

Emergency phone number

| | |
|-----------------------------------|---------------------------------------|
| Association / Organisation | Boeing Distribution Services Pty Ltd |
| Emergency telephone numbers | +61 7 3292 5200 (8:00am - 6:00pm M-F) |
| Other emergency telephone numbers | Not Available |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Classified as Dangerous Goods for transport purposes.

ChemWatch Hazard Ratings

ACETONE

| | Min | Max |
|--------------|-----|-----|
| Flammability | 3 | |
| Toxicity | 1 | |
| Body Contact | 2 | |
| Reactivity | 1 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification Flammable Liquid Category 2, Specific target organ toxicity - single exposure Category 3 (narcotic effects), Eye Irritation Category 2A

Label elements

Hazard pictogram(s)



Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
H336 May cause drowsiness or dizziness.
H319 Causes serious eye irritation.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P271 Use only outdoors or in a well-ventilated area.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.

Precautionary statement(s) Response

P370+P378 In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

| CAS No | %[weight] | Name |
|---------|-----------|---------|
| 67-64-1 | 95-99.5 | acetone |

Mixtures

See section above for composition of Substances

SECTION 4 First-aid measures

Description of first aid measures

| | |
|---------------------|---|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. |

Continued...

ACETONE

| | |
|------------|---|
| Inhalation | <ul style="list-style-type: none"> ▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor. |
| Ingestion | <ul style="list-style-type: none"> ▸ If swallowed do NOT induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to acetone:

- Symptoms of acetone exposure approximate ethanol intoxication.
- About 20% is expired by the lungs and the rest is metabolised. Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.
- There are no known antidotes and treatment should involve the usual methods of decontamination followed by supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

Management:

Measurement of serum and urine acetone concentrations may be useful to monitor the severity of ingestion or inhalation.

Inhalation Management:

- Maintain a clear airway, give humidified oxygen and ventilate if necessary.
- If respiratory irritation occurs, assess respiratory function and, if necessary, perform chest X-rays to check for chemical pneumonitis.
- Consider the use of steroids to reduce the inflammatory response.
- Treat pulmonary oedema with PEEP or CPAP ventilation.

Dermal Management:

- Remove any remaining contaminated clothing, place in double sealed, clear bags, label and store in secure area away from patients and staff.
- Irrigate with copious amounts of water.
- An emollient may be required.

Eye Management:

- Irrigate thoroughly with running water or saline for 15 minutes.
- Stain with fluorescein and refer to an ophthalmologist if there is any uptake of the stain.

Oral Management:

- No **GASTRIC LAVAGE OR EMETIC**
- Encourage oral fluids.

Systemic Management:

- Monitor blood glucose and arterial pH.
- Ventilate if respiratory depression occurs.
- If patient unconscious, monitor renal function.
- Symptomatic and supportive care.

The Chemical Incident Management Handbook:

Guy's and St. Thomas' Hospital Trust, 2000

BIOLOGICAL EXPOSURE INDEX

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

| Determinant | Sampling Time | Index | Comments |
|------------------|---------------|---------|----------|
| Acetone in urine | End of shift | 50 mg/L | NS |

NS: Non-specific determinant; also observed after exposure to other material

SECTION 5 Fire-fighting measures

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

| | |
|----------------------|--|
| Fire Incompatibility | ▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|----------------------|--|

Special protective equipment and precautions for fire-fighters

| | |
|-----------------------|---|
| Fire Fighting | <ul style="list-style-type: none"> ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water course. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat, flame and/or oxidisers. ▸ Vapour may travel a considerable distance to source of ignition. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. <p>Combustion products include: carbon dioxide (CO₂) other pyrolysis products typical of burning organic material.</p> |

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ACETONE

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|--|
| Minor Spills | <ul style="list-style-type: none"> Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. |
| Major Spills | <ul style="list-style-type: none"> Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

| | |
|--------------------------|--|
| Safe handling | <ul style="list-style-type: none"> Containers, even those that have been emptied, may contain explosive vapours. Do NOT cut, drill, grind, weld or perform similar operations on or near containers. DO NOT allow clothing wet with material to stay in contact with skin Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. <p>Contains low boiling substance: Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.</p> <ul style="list-style-type: none"> Check for bulging containers. Vent periodically Always release caps or seals slowly to ensure slow dissipation of vapours |
| Other information | <ul style="list-style-type: none"> Store in original containers in approved flame-proof area. No smoking, naked lights, heat or ignition sources. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. Keep containers securely sealed. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|--|
| Suitable container | <ul style="list-style-type: none"> Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid. Check that containers are clearly labelled and free from leaks. For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) For manufactured product having a viscosity of at least 250 cSt. |
| Storage incompatibility | <p>Acetone:</p> <ul style="list-style-type: none"> may react violently with chloroform, activated charcoal, aliphatic amines, bromine, bromine trifluoride, chlorotriazine, chromic(IV) acid, chromic(VI) acid, chromium trioxide, chromyl chloride, hexachloromelamine, iodine heptafluoride, iodoform, liquid oxygen, nitrosyl chloride, nitrosyl perchlorate, nitryl perchlorate, perchloromelamine, peroxomonosulfuric acid, platinum, potassium tert-butoxide, strong acids, sulfur dichloride, trichloromelamine, xenon tetrafluoride reacts violently with bromoform and chloroform in the presence of alkalis or in contact with alkaline surfaces. may form unstable and explosive peroxides in contact with strong oxidisers, fluorine, hydrogen peroxide (90%), sodium perchlorate, 2-methyl-1,3-butadiene can increase the explosive sensitivity of nitromethane on contact flow or agitation may generate electrostatic charges due to low conductivity dissolves or attacks most rubber, resins, and plastics (polyethylenes, polyester, vinyl ester, PVC, Neoprene, Viton) <p>Ketones in this group:</p> <ul style="list-style-type: none"> are reactive with many acids and bases liberating heat and flammable gases (e.g., H₂). react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H₂) and heat. are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides. react violently with aldehydes, HNO₃ (nitric acid), HNO₃ + H₂O₂ (mixture of nitric acid and hydrogen peroxide), and HClO₄ (perchloric acid). Avoid reaction with oxidising agents |



+ X + X + + +

X — Must not be stored together
0 — May be stored together with specific preventions
+ — May be stored together

SECTION 8 Exposure controls / personal protection

ACETONE

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA


| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|------------|--|-----------------------|---------------|---------------|--------------------------------|
| US NIOSH Recommended Exposure Limits (RELs) | acetone | Dimethyl ketone, Ketone propane, 2-Propanone | 250 ppm / 590 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | acetone | Acetone | 1000 ppm / 2400 mg/m3 | Not Available | Not Available | Not Available |
| US ACGIH Threshold Limit Values (TLV) | acetone | Acetone | 250 ppm | 500 ppm | Not Available | URT & eye irr; CNS impair; BEI |

Emergency Limits

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|------------|---------------|---------------|---------------|---------------|
| acetone | Acetone | Not Available | Not Available | Not Available |

| Ingredient | Original IDLH | Revised IDLH |
|------------|---------------|---------------|
| acetone | 2,500 ppm | Not Available |

Exposure controls

| | |
|---|---|
| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> Overalls. PVC Apron. PVC protective suit may be required if exposure severe. Eyewash unit. Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. |

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
ACETONE

| Material | CPI |
|------------------|-----|
| BUTYL | A |
| BUTYL/NEOPRENE | A |
| PE/EVAL/PE | A |
| PVDC/PE/PVDC | A |
| SARANEX-23 2-PLY | B |
| TEFLON | B |
| CPE | C |
| HYPALON | C |

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES | Air-line* | AX-2 | AX-PAPR-2 ^ |
| up to 20 x ES | - | AX-3 | - |
| 20+ x ES | - | Air-line** | - |

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic

ACETONE

| | |
|------------------|---|
| NATURAL RUBBER | C |
| NATURAL+NEOPRENE | C |
| NEOPRENE | C |
| NITRILE | C |
| NITRILE+PVC | C |
| PVA | C |
| PVC | C |
| SARANEX-23 | C |
| VITON/NEOPRENE | C |

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| | | | |
|---|---|--|----------------|
| Appearance | Clear, colourless, highly volatile, highly flammable liquid with characteristic sweet odour; mixes with water. Mixes in alcohol, ether, most hydrocarbons and oils. | | |
| Physical state | Liquid | Relative density (Water = 1) | 0.79 @ 20 C |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | 465 |
| pH (as supplied) | Not Applicable | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | -95.4 | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | 56 | Molecular weight (g/mol) | 58.08 |
| Flash point (°C) | -17 | Taste | Not Available |
| Evaporation rate | 11 BuAc=1 VFast | Explosive properties | Not Available |
| Flammability | HIGHLY FLAMMABLE. | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | 12.8 | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | 2.6 | Volatile Component (%vol) | 100 |
| Vapour pressure (kPa) | 24 @ 20 C | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Applicable |
| Vapour density (Air = 1) | 2.0 | VOC g/L | Not Available |

SECTION 10 Stability and reactivity

| | |
|---|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none">▶ Unstable in the presence of incompatible materials.▶ Product is considered stable.▶ Hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

| | |
|----------------|--|
| Inhaled | Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Effects of exposure to acetone by inhalation include central nervous system depression, light-headedness, unintelligible speech, inco-ordination, stupor, low blood pressure, fast heart rate, metabolic acidosis, high blood sugar and ketosis. Rarely, there may be convulsions and death of |
|----------------|--|

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ACETONE

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|---------------------|---|
| | kidney tubules. Ketone vapours irritate the nose, throat and mucous membrane. High concentrations depress the central nervous system, causing headache, vertigo, poor concentration, sleep and failure of the heart and breathing. |
| Ingestion | Large ingestions may produce coma, respiratory depression, and rarely, convulsions. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. |
| Skin Contact | Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| Eye | There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. The liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration |
| Chronic | Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Workers exposed to acetone for long periods showed inflammation of the airways, stomach and small bowel, attacks of giddiness and loss of strength. Exposure to acetone may enhance the liver toxicity of chlorinated solvents. |

| acetone | TOXICITY | IRRITATION |
|---------|--|--|
| | Dermal (rabbit) LD50: >7.426 mg/kg ^[1] | Eye (human): 500 ppm - irritant |
| | Inhalation(Mouse) LC50; 44 mg/L4hrs ^[2] | Eye (rabbit): 20mg/24hr -moderate |
| | Oral(Mouse) LD50; 0.003 mg/kg ^[2] | Eye (rabbit): 3.95 mg - SEVERE |
| | | Eye: adverse effect observed (irritating) ^[1] |
| | | Skin (rabbit): 500 mg/24hr - mild |
| | | Skin (rabbit):395mg (open) - mild |
| | | Skin: no adverse effect observed (not irritating) ^[1] |

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|----------------|---|
| ACETONE | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. For acetone: The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitizer, but it removes fat from the skin, and it also irritates the eye. Animal testing shows acetone may cause macrocytic anaemia. Studies in humans have shown that exposure to acetone at a level of 2375 mg/cubic metre has not caused neurobehavioural deficits. |
|----------------|---|

| | | | |
|--|---|---------------------------------|---|
| Acute Toxicity | ✗ | Carcinogenicity | ✗ |
| Skin Irritation/Corrosion | ✗ | Reproductivity | ✗ |
| Serious Eye Damage/Irritation | ✓ | STOT - Single Exposure | ✓ |
| Respiratory or Skin sensitisation | ✗ | STOT - Repeated Exposure | ✗ |
| Mutagenicity | ✗ | Aspiration Hazard | ✗ |

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

| acetone | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------------|---|--------------------|-------------------------------|------------------------|--------|
| | LC50 | 96 | Fish | >100mg/L | 4 |
| | EC50 | 48 | Crustacea | 6098.4mg/L | 5 |
| | EC50 | 96 | Algae or other aquatic plants | -9.873-27.684mg/L | 4 |
| | NOEC | 96 | Not Available | <0.000000005- =mg/L | 4 |
| Legend: | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data | | | | |

For Ketones: Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.

Aquatic Fate: Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones. Reactions with water are reversible with no permanent change in the structure of the ketone substrate. Ketones are stable to water under ambient environmental conditions.

For Acetone:

log Kow : -0.24;

Half-life (hr) air : 312-1896;

Half-life (hr) H2O surface water : 20;

Henry's atm m3/mol : 3.67E-05

BOD 5: 0.31-1.76,46-55%

Continued...

ACETONE

COD: 1.12-2.07

ThOD: 2.2BCF: 0.69.

Environmental Fate: The relatively long half-life allows acetone to be transported long distances from its emission source.

Atmospheric Fate: Acetone preferentially locates in the air compartment when released to the environment. In air, acetone is lost by photolysis and reaction with photochemically produced hydroxyl radicals; the estimated half-life of these combined processes is about 22 days.

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------|----------------------------------|
| acetone | LOW (Half-life = 14 days) | MEDIUM (Half-life = 116.25 days) |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|------------|------------------|
| acetone | LOW (BCF = 0.69) |

Mobility in soil

| Ingredient | Mobility |
|------------|--------------------|
| acetone | HIGH (KOC = 1.981) |


SECTION 13 Disposal considerations

Waste treatment methods

| | |
|------------------------------|--|
| Product / Packaging disposal | <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none">▸ Reduction▸ Reuse▸ Recycling▸ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none">▸ DO NOT allow wash water from cleaning or process equipment to enter drains.▸ It may be necessary to collect all wash water for treatment before disposal.▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.▸ Where in doubt contact the responsible authority.▸ Recycle wherever possible.▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).▸ Decontaminate empty containers. |
|------------------------------|--|

SECTION 14 Transport information

Labels Required

| | |
|------------------|---|
| |  |
| Marine Pollutant | NO |

Land transport (DOT)

| | | |
|------------------------------|--------------------|----------------|
| UN number | 1090 | |
| UN proper shipping name | Acetone | |
| Transport hazard class(es) | Class | 3 |
| | Subrisk | Not Applicable |
| Packing group | II | |
| Environmental hazard | Not Applicable | |
| Special precautions for user | Hazard Label | 3 |
| | Special provisions | IB2, T4, TP1 |

Air transport (ICAO-IATA / DGR)

| | | |
|----------------------------|---------------------|----------------|
| UN number | 1090 | |
| UN proper shipping name | Acetone | |
| Transport hazard class(es) | ICAO/IATA Class | 3 |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | 3H |

| | | |
|------------------------------|---|----------------|
| Packing group | II | |
| Environmental hazard | Not Applicable | |
| Special precautions for user | Special provisions | Not Applicable |
| | Cargo Only Packing Instructions | 364 |
| | Cargo Only Maximum Qty / Pack | 60 L |
| | Passenger and Cargo Packing Instructions | 353 |
| | Passenger and Cargo Maximum Qty / Pack | 5 L |
| | Passenger and Cargo Limited Quantity Packing Instructions | Y341 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 1 L |

Sea transport (IMDG-Code / GGVSee)

| | | |
|------------------------------|--------------------|----------------|
| UN number | 1090 | |
| UN proper shipping name | ACETONE | |
| Transport hazard class(es) | IMDG Class | 3 |
| | IMDG Subrisk | Not Applicable |
| Packing group | II | |
| Environmental hazard | Not Applicable | |
| Special precautions for user | EMS Number | F-E , S-D |
| | Special provisions | Not Applicable |
| | Limited Quantities | 1 L |

Transport in bulk according to Annex II of MARPOL and the IBC code

| Product name | Pollution Category | Ship Type |
|--|--------------------|-----------|
| Oxygenated aliphatic hydrocarbon mixture | Z | 3 |

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name | Group |
|--------------|---------------|
| acetone | Not Available |

Transport in bulk in accordance with the ICG Code

| Product name | Ship Type |
|--------------|---------------|
| acetone | Not Available |

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

| |
|--|
| acetone is found on the following regulatory lists |
| US ACGIH Threshold Limit Values (TLV) |
| US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US AIHA Workplace Environmental Exposure Levels (WEELs) |
| US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs) |
| US DOE Temporary Emergency Exposure Limits (TEELs) |
| US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals |
| US EPA Integrated Risk Information System (IRIS) |
| US NIOSH Recommended Exposure Limits (RELs) |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US OSHA Permissible Exposure Limits - Annotated Table Z-1 |
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US TSCA Chemical Substance Inventory - Interim List of Active Substances |
| US TSCA Section 4/12 (b) - Sunset Dates/Status |

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

| | |
|---|-----|
| Section 311/312 hazard categories | |
| Flammable (Gases, Aerosols, Liquids, or Solids) | Yes |
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |

ACETONE

| | |
|--|-----|
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | Yes |
| Specific target organ toxicity (single or repeated exposure) | Yes |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|---------|------------------------------------|---------------------------|
| Acetone | 5000 | 2270 |

State Regulations

US. California Proposition 65

None Reported

National Inventory Status

| National Inventory | Status |
|--|--|
| Australia - AIIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (acetone) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | Yes |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | Yes |
| Vietnam - NCI | Yes |
| Russia - ARIPS | Yes |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 Other information

| | |
|---------------|------------|
| Revision Date | 03/09/2020 |
| Initial Date | 28/11/2005 |

SDS Version Summary

| Version | Issue Date | Sections Updated |
|---------|------------|--|
| 4.1.1.1 | 25/02/2016 | Personal Protection (Respirator), Supplier Information, Synonyms |
| 5.1.1.1 | 03/09/2020 | Expiration. Review and Update |

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC— TWA: Permissible Concentration-Time Weighted Average

Continued...

ACETONE

PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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