

PORCELAIN SEALER

Chemwatch Material Safety Data Sheet
May-18-2007
NB293EC

CHEMWATCH 4671-29
Version No:6
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

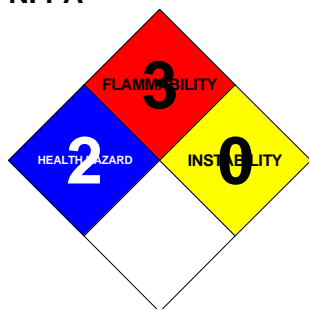
PRODUCT NAME

PORCELAIN SEALER

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Company: Dry- Treat Inc.

Address:

1201 Orange Street Suite 600

One Commerce Center

Willmington DE 19801

USA

Telephone: 1 866 667 5119

Telephone: +61 2 9954 3211

Emergency Tel: CHEM- TEL (800) 255- 3924 Outside

USA (813) 248- 0585

Emergency Tel: +61 2 9954 3211

Fax: +61 2 9954 3162

PRODUCT USE

Water and stain protection for masonry substrate.

SYNONYMS

"stain preventer", "masonry sealant"

Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

RISK

Irritating to eyes.

HARMFUL - May cause lung damage if swallowed.

Highly flammable.

Repeated exposure may cause skin dryness and cracking.

Vapors may cause dizziness or suffocation.

continued...

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Section 2 - HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733).

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. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure.

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

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.

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.

INHALED

Not normally a hazard due to non-volatile nature of product.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

Ketone vapors 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. Some ketones can cause multiple nerve disorders, inducing "pins and needles" and weakness in the limbs.

Systemic effects of acetone inhalation exposure include central nervous system depression, light-headedness, incoherent speech, ataxia, stupor, hypotension, tachycardia, metabolic acidosis, hyperglycaemia and ketosis. Rarely, convulsions and tubular necrosis may be evident. Other symptoms of exposure may include restlessness, headache, vomiting, low blood-pressure and rapid and irregular pulse, eye and throat irritation, weakness of the legs and dizziness. Inhalation of high concentrations may produce dryness of the mouth and throat, nausea, uncoordinated movement, loss of coordinated speech, drowsiness and, in severe cases, coma. Inhalation of acetone vapours over long periods causes irritation of the respiratory tract, coughing and headache. Rats exposed to 52200 ppm vapour for 1 hour showed clear signs of narcosis; fatalities occurred at 126600 ppm.

CHRONIC HEALTH EFFECTS

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Workers exposed to 700 ppm acetone for 3 hours/day for 7-15 years showed inflammation of the respiratory tract, stomach and duodenum, attacks of giddiness and loss of strength.

Exposure to acetone may enhance liver toxicity of chlorinated solvents.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|------------------------|---------|------|
| acetone | 67-64-1 | >60 |
| additives nonhazardous | | 1-10 |

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Section 4 - FIRST AID MEASURES

SWALLOWED

If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

- 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.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with 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.
- Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

- 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.

INHALED

- 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.

NOTES TO PHYSICIAN

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 metabolized. 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:

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Section 4 - FIRST AID MEASURES

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 edema 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

Flash Point (°F): Not Available

Lower Explosive Limit (%): Not Available

Upper Explosive Limit (%): Not Available

Autoignition Temp (°F): Not Available

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- May be violently or explosively reactive.

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Section 5 - FIRE FIGHTING MEASURES

- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapor fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protective location.
- If safe to do so, remove containers from path of fire.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1640 feet in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Liquid and vapor are highly flammable.
 - Severe fire hazard when exposed to heat, flame and/or oxidizers.
 - Vapor may travel a considerable distance to source of ignition.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - On combustion, may emit toxic fumes of carbon monoxide (CO).
- Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

PVC chemical resistant type.

Respirator:

Type AX Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse / absorb vapor.
- Contain spill with sand, earth or vermiculite.

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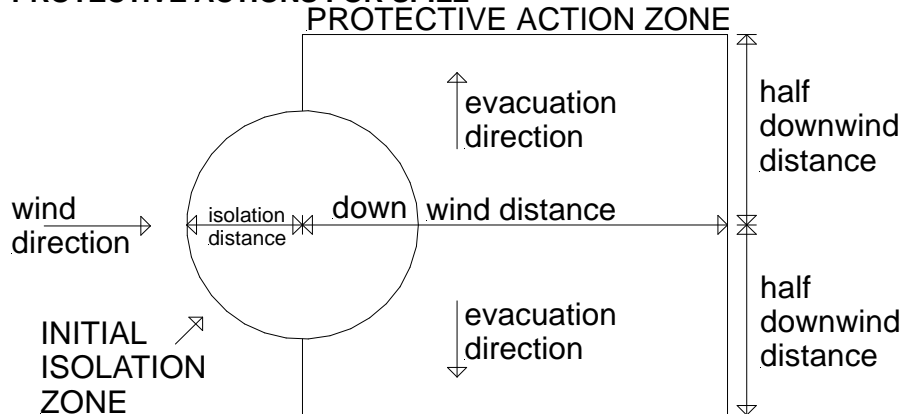
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Section 6 - ACCIDENTAL RELEASE MEASURES

- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labeled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labeled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

| | |
|------------------------------|------------|
| Isolation Distance | 25 meters |
| Downwind Protection Distance | 300 meters |

FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapor plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapor concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localized wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.
- 4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
- 5 Guide 128 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

acetone 8500 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

acetone 8500 ppm

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Section 6 - ACCIDENTAL RELEASE MEASURES

other than mild, transient adverse effects without perceiving a clearly defined odour is:
acetone 1000 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:
acetone 1000 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

| | | | |
|-----------------|----------|---------------|---------|
| Very Toxic (T+) | >= 0.1% | Toxic (T) | >= 3.0% |
| R50 | >= 0.25% | Corrosive (C) | >= 5.0% |
| R51 | >= 2.5% | | |
| else | >= 10% | | |

where percentage is percentage of ingredient found in the mixture

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Containers, even those that have been emptied, may contain explosive vapors.
- 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.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapor may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

RECOMMENDED STORAGE METHODS

Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid. Check that containers are clearly labeled and free from leaks.

- For low viscosity materials (i): Drums and jerricans 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. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (23 deg. C) - (i): Removable head packaging; (ii): Cans with friction closures and (iii): low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages
- In addition, where inner packages are glass and contain liquids of packing group I

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Section 7 - HANDLING AND STORAGE

there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting molded plastic box and the substances are not incompatible with the plastic.

STORAGE REQUIREMENTS

- 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 vapors may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

US OSHA Permissible Exposure Levels (PELs)

| Z | Material | TWA ppm | TWA mg/m ³ | STEL ppm | STEL mg/m ³ | Peak ppm | Peak mg/m ³ | Max excursi on ppm | Max excursi on mg/m ³ | Max excursi on duration (mins) | TWA F/CC |
|--|-------------------|---------|-----------------------|----------|------------------------|----------|------------------------|--------------------|----------------------------------|--------------------------------|----------|
| Z1 | Acetone | 1000 | 2400 | | | | | | | | |
| Source | Material | TWA ppm | TWA mg/m ³ | STEL ppm | STEL mg/m ³ | Peak ppm | Peak mg/m ³ | Peak ppm | Peak mg/m ³ | TWA F/CC | |
| Canada - Quebec Occupational Exposure Limits (French) | acetone (Acétone) | 750 | 1780 | 1000 | 2380 | | | | | | |
| US - Minnesota Permissible Exposure Limits (PELs) | acetone (Acetone) | 750 | 1800 | 1000 | 2400 | | | | | | |
| US - Vermont Permissible Exposure Limits Table Z-1- A Transitional Limits for Air Contaminants | acetone (Acetone) | 1000 | 2400 | | | | | | | | |
| US - Vermont Permissible | acetone (Acetone) | 750 | 1800 | 1000 | 2400 | | | | | | |

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

| Source | Material | TWA ppm | TWA mg/m ³ | STEL ppm | STEL mg/m ³ | Peak ppm | Peak mg/m ³ | TWA F/CC |
|--|-------------------|---------|-----------------------|----------|------------------------|----------|------------------------|----------|
| Exposure Limits Table Z-1- A Final Rule Limits for Air Contaminants | | | | | | | | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | acetone (Acetone) | 750 | 1800 | 1000 | 2400 | | | |
| US - California Permissible Exposure Limits for Chemical Contaminants | acetone (Acetone) | 750 | 1780 | 1000 | 2400 | 3000 | | |
| US - Idaho - Limits for Air Contaminants | acetone (Acetone) | 1000 | 2400 | | | | | |
| US - Hawaii Air Contaminant Limits | acetone (Acetone) | 750 | 1,780 | 1,000 | 2,375 | | | |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | acetone (Acetone) | 1000 | 2400 | | | | | |
| Canada - Saskatchewan an Occupational Health and Safety Regulations - Contaminant ion Limits | acetone (Acetone) | | 1780 | | 2380 | | | |
| Canada - Yukon Permissible | acetone (Acetone) | 1,000 | 2,400 | 1,250 | 3,000 | | | |

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| Source | Material | TWA ppm | TWA mg/m ³ | STEL ppm | STEL mg/m ³ | Peak ppm | Peak mg/m ³ | TWA F/CC |
|--|-------------------|---------|-----------------------|----------|------------------------|----------|------------------------|----------|
| Concentrations for Airborne Contaminant Substances | | | | | | | | |
| US - Washington | acetone (Acetone) | 750 | | 1,000 | | | | |
| Permissible exposure limits of air contaminants | | | | | | | | |
| US ACGIH Threshold Limit Values (TLV) | acetone (Acetone) | 500 | | 750 | | | | |
| Canada - British Columbia Occupational Exposure Limits | acetone (Acetone) | 250 | | 500 | | | | |
| Canada - Ontario Occupational Exposure Limits | acetone (Acetone) | 500 | | 750 | | | | |
| Canada - Alberta Occupational Exposure Limits | acetone (Acetone) | 750 | 1800 | 1000 | 2400 | | | |
| US NIOSH Recommended Exposure Limits (RELs) | acetone (Acetone) | 250 | 590 | | | | | |

EMERGENCY EXPOSURE LIMITS

| Material | Revised IDLH Value (mg/m ³) | Revised IDLH Value (ppm) |
|----------|---|--------------------------|
| acetone | | 2,500 [LEL] |

NOTES

Values marked LEL indicate that the IDLH was based on 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.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

MATERIAL DATA

Not available. Refer to individual constituents.

INGREDIENT DATA

ACETONE:

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odor Safety Factor (OSF) is determined to fall into either Class A or B.

The Odor Safety Factor (OSF) is defined as:

$OSF = \frac{\text{Exposure Standard (TWA) ppm}}{\text{Odor Threshold Value (OTV) ppm}}$

Classification into classes follows:

| Class | OSF | Description |
|-------|---------|---|
| A | 550 | Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities |
| B | 26- 550 | Idem for 50- 90% of persons being distracted |
| C | 1- 26 | Idem for less than 50% of persons being distracted |
| D | 0.18- 1 | 0- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached |
| E | <0.18 | Idem for less than 10% of persons aware of being tested |

Amoore and Hautala * have determined that it is only at an OSF value of 26 that 50% of distracted persons can detect the substance at the Exposure Standard value. In the case of alerted persons, an OSF of 26 means that 99% of them can detect the odor at the Exposure Standard value. It is ONLY for substances belonging to Class A and B that there is a reasonable chance of being warned in time, that the Exposure Standard is being exceeded. * Journal Applied Toxicology: Vol 3, 1983, p272

NOTE: The use of the OSF may be inappropriate for mixtures where substances mask the odor of others.

Odour Threshold Value: 3.6 ppm (detection), 699 ppm (recognition)

Saturation vapour concentration: 237000 ppm @ 20 C

NOTE: Detector tubes measuring in excess of 40 ppm, are available.

Exposure at or below the recommended TLV-TWA is thought to protect the worker against mild irritation associated with brief exposures and the bioaccumulation, chronic irritation of the respiratory tract and headaches associated with long-term acetone exposures. The NIOSH REL-TWA is substantially lower and has taken into account slight irritation experienced by volunteer subjects at 300 ppm. Mild irritation to acclimatised workers begins at about 750 ppm - unacclimatised subjects will experience irritation at about 350-500 ppm but acclimatisation can occur rapidly. Disagreement between the peak bodies is based largely on the view by ACGIH that widespread use of acetone, without evidence of significant adverse health effects at higher concentrations, allows acceptance of a higher limit.

Half-life of acetone in blood is 3 hours which means that no adjustment for shift-length has to be made with reference to the standard 8 hour/day, 40 hours per week because body clearance occurs within any shift with low potential for accumulation.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

A STEL has been established to prevent excursions of acetone vapours that could cause depression of the central nervous system.

PERSONAL PROTECTION

EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them. DO NOT wear contact lenses.

HANDS/FEET

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Breathing Zone Level ppm (volume) | Maximum Protection Factor | Half- face Respirator | Full- Face Respirator |
|--------------------------------------|------------------------------|-----------------------|-----------------------|
| 1000 | 10 | AX- 1 | - |
| 1000 | 50 | - | AX- 1 |
| 5000 | 50 | Airline* | - |
| 5000 | 100 | - | AX- 2 |
| 10000 | 100 | - | AX- 3 |
| | 100+ | | Airline* * |

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

ENGINEERING CONTROLS

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Molecular Weight: Not Applicable

Melting Range (°F): Not Available

Solubility in water (g/L): Partly Miscible

pH (1% solution): Not Applicable

Volatile Component (%vol): Not Available

Relative Vapor Density (air=1): Not Available

Lower Explosive Limit (%): Not Available

Autoignition Temp (°F): Not Available

State: Liquid

Boiling Range (°F): Not Available

Specific Gravity (water= 1): Not Available

pH (as supplied): Not Applicable

Vapor Pressure (mmHg): Not Available

Evaporation Rate: Not Available

Flash Point (°F): -2 (ASTM D 56)

Upper Explosive Limit (%): Not Available

Decomposition Temp (°F): Not Available

Viscosity: Not Available

APPEARANCE

Highly flammable liquid with a characteristic odour; partly mixes with water.

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

STORAGE INCOMPATIBILITY

Acetone reacts violently with bromoform and chloroform in the presence of alkalis or in contact with alkaline surfaces.
Avoid reaction with oxidizing agents.

Section 11 - TOXICOLOGICAL INFORMATION

Porcelain Sealer

TOXICITY AND IRRITATION

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.

ACETONE:

TOXICITY

Oral (man) TDLo: 2857 mg/kg

Oral (rat) LD50: 5800 mg/kg

Inhalation (human) TCLo: 500 ppm

Inhalation (man) TCLo: 12000 ppm/4 hr

Inhalation (man) TCLo: 10 mg/m³/6 hr

Inhalation (rat) LC50: 50100 mg/m³/8 hr

Dermal (rabbit) LD50: 20000 mg/kg

IRRITATION

Eye (human): 500 ppm - Irritant

Eye (rabbit): 3.95 mg - SEVERE

Eye (rabbit): 20mg/24hr - Moderate

Skin (rabbit):395mg (open) - Mild

Skin (rabbit): 500 mg/24hr - Mild

MATERIAL

CARCINOGEN SENSITIZER SKIN

MUTAGEN

REPROTOXIN

continued...

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Section 11 - TOXICOLOGICAL INFORMATION

acetone

ACGIH:A4

CARCINOGEN

ACGIH: acetone: A4

Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant:Not Determined

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

ACETONE:

| | |
|--|-------------|
| Fish LC50 (96hr.) (mg/l): | 8300- 40000 |
| Daphnia magna EC50 (48hr.) (mg/l): | 10 |
| log Kow (Prager 1995): | - 0.24 |
| log Kow (Sangster 1997): | - 0.24 |
| log Pow (Verschueren 1983): | - 0.24 |
| BOD5: | 122% |
| ThOD: | 72 |
| Half- life Soil - High (hours): | 168 |
| Half- life Soil - Low (hours): | 24 |
| Half- life Air - High (hours): | 2790 |
| Half- life Air - Low (hours): | 279 |
| Half- life Surface water - High (hours): | 168 |
| Half- life Surface water - Low (hours): | 24 |
| Half- life Ground water - High (hours): | 336 |
| Half- life Ground water - Low (hours): | 48 |
| Aqueous biodegradation - Aerobic - High (hours): | 168 |
| Aqueous biodegradation - Aerobic - Low (hours): | 24 |
| Aqueous biodegradation - Anaerobic - High (hours): | 672 |
| Aqueous biodegradation - Anaerobic - Low (hours): | 96 |
| Aqueous biodegradation - Removal secondary treatment - High (hours): | 75% |
| Aqueous biodegradation - Removal secondary treatment - Low (hours): | 54% |
| Aqueous photolysis half- life - High (hours): | 270 |
| Photooxidation half- life water - High (hours): | 3.97E+06 |
| Photooxidation half- life water - Low (hours): | 9.92E+04 |
| Photooxidation half- life air - High (hours): | 2790 |
| Photooxidation half- life air - Low (hours): | 279 |

DO NOT discharge into sewer or waterways.

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 if unstated: 0.31-1.76,46-55%

COD: 1.12-2.07

ThOD: 2.2

BCF: 0.69

Toxicity Fish: LC50(96) 5540-13000mg/L

Toxicity invertebrate: cell mult. inhib. 28-7500mg/L

Bioaccumulation: not sig

Nitrif. inhib.: 75% decr. at 840mg/L

Anaerobic effects: sig degrad

Degradation Biological: sig

processes Abiotic: Rxn OH*, photodissoc

In air, acetone is lost by photolysis and reaction with photochemically produced hydroxyl radicals; the estimated half-life of these combined

continued...

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Section 12 - ECOLOGICAL INFORMATION

processes is about 22 days. The relatively long half-life allows acetone to be transported long distances from its emission source.

Acetone is highly soluble and slightly persistent in water, with a half-life of about 20 hours; it is minimally toxic to aquatic life.

Acetone released to soil volatilises although some may leach into the ground where it rapidly biodegrades.

Acetone does not concentrate in the food chain.

Drinking Water Standard: none available.

Soil Guidelines: none available.

Air Quality Standards: none available.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Ignitability characteristic: use EPA hazardous waste number D001 (waste code I)

B. Component Waste Numbers

When acetone is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U002 (waste code I).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION



DOT Information:

| | | | |
|---|------|----------------|------|
| Dangerous Goods Class: | 3 | Subrisk: | None |
| UN Number: | 1993 | Packing Group: | II |
| Shipping Name: FLAMMABLE LIQUID, N.O.S. (contains acetone) | | | |

Air Transport IATA:

| | | | |
|------------------|------|--------------------|------|
| ICAO/IATA Class: | 3 | ICAO/IATA Subrisk: | None |
| UN/ID Number: | 1993 | Packing Group: | II |
| ERG Code: | 3H | | |

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Section 14 - TRANSPORTATION INFORMATION

Shipping name:FLAMMABLE LIQUID, N.O.S.
(contains acetone)

Maritime Transport IMDG:

| | | | |
|-------------|------------|-------------------|----------------|
| IMDG Class: | 3 | IMDG Subrisk: | None |
| UN Number: | 1993 | Packing Group: | II |
| EMS Number: | F- E, S- E | Marine Pollutant: | Not Determined |

Shipping name:FLAMMABLE LIQUID, N.O.S.
(contains acetone)

Section 15 - REGULATORY INFORMATION

REGULATIONS

US CERCLA List of Hazardous Substances and Reportable Quantities

| Ingredient | CAS | RQ (Pounds) | RQ (KG) |
|------------|-----------|-------------|---------|
| acetone | 67- 64- 1 | 5000 | 2270 |

acetone (CAS: 67-64-1) is found on the following regulatory lists;

- Canada - Alberta Ambient Air Quality Objectives
- Canada - Alberta Occupational Exposure Limits
- Canada - British Columbia Occupational Exposure Limits
- Canada - Ontario Occupational Exposure Limits
- Canada - Quebec Occupational Exposure Limits (French)
- Canada - Saskatchewan Industrial Hazardous Substances
- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances
- Canada Controlled Drugs and Substances Act Schedule VI
- Canada Domestic Substances List (DSL)
- Canada Ingredient Disclosure List (SOR/88-64)
- IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances
- Mexico Maximum Permissible Exposure Limits
- OECD Representative List of High Production Volume (HPV) Chemicals
- United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II
- United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II
- US - Arizona Ambient Air Quality Guidelines
- US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List
- US - California Permissible Exposure Limits for Chemical Contaminants
- US - Connecticut Hazardous Air Pollutants
- US - Hawaii Air Contaminant Limits
- US - Idaho - Limits for Air Contaminants
- US - Minnesota Hazardous Substance List
- US - Minnesota Permissible Exposure Limits (PELs)
- US - New Jersey Right to Know Hazardous Substances
- US - New Jersey Right to Know Hazardous Substances (Spanish)
- US - Rhode Island Hazardous Substance List
- US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
- US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either
- US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air

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Section 15 - REGULATORY INFORMATION

Contaminants

US - Washington Discarded Chemical Products List - "U" Chemical Products
US - Washington Permissible exposure limits of air contaminants
US ACGIH Biological Exposure Indices (BEI)
US ACGIH Carcinogens Listing
US ACGIH Threshold Limit Values (TLV)
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US CERCLA List of Hazardous Substances and Reportable Quantities
US CERCLA Priority List of Hazardous Substances
US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides
US DOE Temporary Emergency Exposure Limits (TEELs)
US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
US Drug Enforcement Administration (DEA) List II or Essential Chemicals
US Drug Enforcement Administration (DEA) Thresholds for Regulated Transactions in List II Chemicals
US EPA Acute Exposure Guideline Levels (AEGLs) - Interim
US EPA Carcinogens Listing
US EPA High Production Volume Program Chemical List
US EPA Voluntary Children's Chemical Evaluation Program (VCCEP)
US Food Additive Database
US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Levels (PELs) - Table Z1
US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1
US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Inorganic and Organic Constituents 1
US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes
US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards
US Toxic Substances Control Act (TSCA) - Inventory
US TSCA Section 4 - Chemicals Subject to Testing Consent Orders
US TSCA Section 4/12 (b) - Sunset Date/Status

Section 16 - OTHER INFORMATION

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