

# Comcater Rat-Cjet Cleaner

Hazard Alert Code:  
**EXTREME**

Chemwatch Material Safety Data Sheet (REVIEW)

Version No: 3

Chemwatch 4958-5

Issue Date: 19-Feb-2008

CD 2011/1

NC317TCP

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Comcater Rat-Cjet Cleaner

### SYNONYMS

"commercial alkaline oven cleaner RatCjet"

### PROPER SHIPPING NAME

CORROSIVE LIQUID, N.O.S. (contains potassium hydroxide)

### PRODUCT NUMBERS

11788

### PRODUCT USE

Commercial oven cleaner.

### SUPPLIER

Company: Comcater

Address:

156 Swann Drive

Derrimut

VIC, 3030

Australia

Telephone: +61 3 8369 4600

Telephone: +61 1800 810 161

Fax: +61 3 8369 4699

Email: [product@comcater.com.au](mailto:product@comcater.com.au)

Website: <http://www.comcater.com.au/>

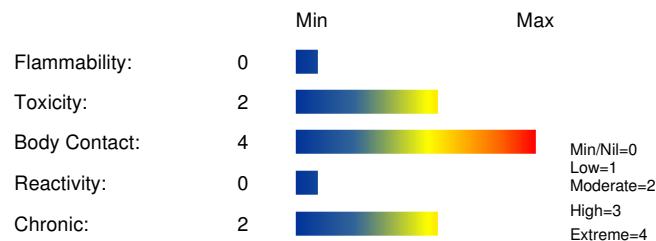
## Section 2 - HAZARDS IDENTIFICATION

### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.**

COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.

### CHEMWATCH HAZARD RATINGS



### POISONS SCHEDULE

S6

#### RISK

- Causes severe burns.
- Risk of serious damage to eyes.
- Ingestion may produce health damage\*.
- Cumulative effects may result following exposure\*.

\* (limited evidence).

#### SAFETY

- Keep locked up.
- Do not breathe gas/ fumes/ vapour/ spray.
- Avoid contact with eyes.
- Wear suitable protective clothing.
- To clean the floor and all objects contaminated by this material, use water.
- Take off immediately all contaminated clothing.
- In case of accident or if you feel unwell, IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible).
- This material and its container must be disposed of as hazardous waste.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
<a href="#">potassium hydroxide</a>	1310-58-3	0-10
<a href="#">diethylene glycol monobutyl ether</a>	112-34-5	0-2
<a href="#">water</a>	7732-18-5	>80

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- 
- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- 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.
- Transport to hospital or doctor without delay.

### 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 Centre 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 or hair contact occurs:
  - Immediately flush body and clothes with large amounts of water, using safety shower if available.
  - Quickly remove all contaminated clothing, including footwear.
  - Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
  - Transport to hospital, or doctor.

### 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, without delay.

### NOTES TO PHYSICIAN

- Treat symptomatically.

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

#### INGESTION:

- Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.

- Neutralising agents should never be given since exothermic heat reaction may compound injury.

\* Catharsis and emesis are absolutely contra-indicated.

\* Activated charcoal does not absorb alkali.

\* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

#### SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

- 
- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- 
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- May emit corrosive fumes.

### FIRE INCOMPATIBILITY

- None known.

### HAZCHEM

2X

### Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

- 
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

- 
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### PROTECTIVE ACTIONS FOR SPILL

From IERG (Canada/Australia)

Isolation Distance

25 metres

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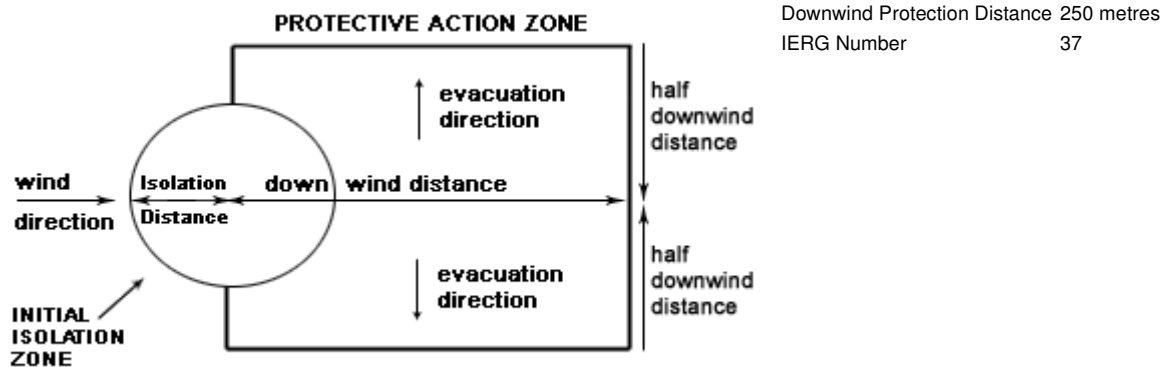
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From US Emergency Response Guide 2000 Guide 154

## 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 vapour 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 vapour 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 localised 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 154 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

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

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- 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 are maintained.
- DO NOT allow clothing wet with material to stay in contact with skin

### SUITABLE CONTAINER

- Lined metal can, lined metal pail/ can.
  - Plastic pail.
  - Polyliner drum.
  - Packing as recommended by manufacturer.
  - Check all containers are clearly labelled and free from leaks.
- For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
  - 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) and solids (between 15 C deg. and 40 deg C.):
- Removable head packaging;
  - Cans with friction closures and
  - low pressure tubes and cartridges may be used.

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Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

## STORAGE INCOMPATIBILITY

- 
- Reacts vigorously with acids
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

## STORAGE REQUIREMENTS

- 
- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.
- DO NOT store near acids, or oxidising agents

Protect containers against physical damage.

- Check regularly for spills and leaks
- No smoking, naked lights, heat or ignition sources.

## SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X: Must not be stored together

O: May be stored together with specific preventions

+: May be stored together

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
Australia Exposure Standards	potassium hydroxide (Potassium hydroxide)						2		
The following materials had no OELs on our records									
• diethylene glycol monobutyl ether: CAS:112-34-5									
• water: CAS:7732-18-5									

### MATERIAL DATA

COMCATER RAT-CJET CLEANER:

Not available

POTASSIUM HYDROXIDE:

■ for potassium hydroxide:

The TLV-TWA is protective against respiratory tract irritation produced at higher concentrations.

DIETHYLENE GLYCOL MONOBUTYL ETHER:

■ For diethylene glycol monobutyl ether:

CEL TWA: 15.5 ppm, 100 mg/m<sup>3</sup>

In studies involving the inhalation toxicity of diethylene glycol monobutyl ether, exposure for 6 hours daily at 100 mg/m<sup>3</sup> had no effect. This concentration is in the range of the saturated vapour concentration.

Local damage was produced following inhalation of concentrations higher than the saturated vapour concentrations, that is, during inhalation of the aerosol (350 mg/m<sup>3</sup>). Since the only potential effects of inhalation are restricted to local discomfort (in the aerosol concentration range) the substance is classified in category I for the limitation of exposure peaks.

Teratogenicity studies have not revealed prenatal toxic effects at high oral doses and this ether is classified in pregnancy risk group C.

WATER:

■ No exposure limits set by NOHSC or ACGIH.

### PERSONAL PROTECTION

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## EYE

- 
- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]

## HANDS/FEET

- 
- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

## OTHER

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

## 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: water, potassium hydroxide

- Protective Material CPI \*

BUTYL	A
NEOPRENE	A
NATURAL RUBBER	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.

## 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	A-AUS P	-
1000	50	-	A-AUS P
5000	50	Airline *	-
5000	100	-	A-2 P
10000	100	-	A-3 P
	100+		Airline**

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\* - 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. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

## ENGINEERING CONTROLS

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Red alkaline liquid; mixes with water.

### PHYSICAL PROPERTIES

Mixes with water.

Corrosive.

Alkaline.

State	LIQUID	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	100 approx.	Solubility in water (g/L)	Miscible
Flash Point (°C)	>100	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	12.5 - 13.5
Autoignition Temp (°C)	Not Available	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	1.06 - 1.08



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Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

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

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow. Epiglottal swelling may result in respiratory distress and asphyxia; shock can occur. Narrowing of the oesophagus, stomach or stomach valve may occur immediately or after a long delay (weeks to years). Severe exposure can perforate the oesophagus or stomach leading to infections of the chest or abdominal cavity, with low chest pain, abdominal stiffness and fever. All of the above can cause death.

##### EYE

■ If applied to the eyes, this material causes severe eye damage.

Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

##### SKIN

■ The material can produce severe chemical burns following direct contact with 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.

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.

##### INHALED

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

The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. In severe cases, lung swelling may develop, sometimes after a delay of hours to days. There may be low blood pressure, a weak and rapid pulse, and crackling sounds.

Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.

The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

### CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.

### TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

COMCATER RAT-CJET CLEANER:

■ None assigned. Refer to individual constituents.

POTASSIUM HYDROXIDE:

TOXICITY

Oral (rat) LD50: 273 mg/kg

IRRITATION

Skin (human): 50 mg/24h SEVERE

Skin (rabbit): 50 mg/24h SEVERE

Eye (rabbit): 1mg/24h rinse-Moderate

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-



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allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause severe 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. Repeated exposures may produce severe ulceration.

## TOXICITY

## IRRITATION

### DIETHYLENE GLYCOL MONOBUTYL ETHER:

Oral (rat) LD50: 5660 mg/kg

Eye  
(rabbit):  
5 mg -  
SEVERE

Dermal (rabbit) LD50: 4120 mg/kg

Eye (rabbit): 20 mg/24h Moderate

- The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

This category includes diethylene glycol ethyl ether (DGEE), diethylene glycol propyl ether (DGPE) diethylene glycol butyl ether (DGBE) and diethylene glycol hexyl ether (DGHE) and their acetates. Studies show that they can cause kidney and liver damage, skin and eye irritation as well as blood changes but do not cause damage to the reproductive, genetic and developmental abnormalities, sensitisation or respiratory systems. However, DGEE is reported to cause sperm insufficiency.

## WATER:

- No significant acute toxicological data identified in literature search.

## Section 12 - ECOLOGICAL INFORMATION

### DIETHYLENE GLYCOL MONOBUTYL ETHER:

#### POTASSIUM HYDROXIDE:

- DO NOT discharge into sewer or waterways.

#### POTASSIUM HYDROXIDE:

- Prevent, by any means available, spillage from entering drains or water courses.

### DIETHYLENE GLYCOL MONOBUTYL ETHER:

- For glycol ethers:

#### Environmental fate:

Ether groups are generally stable to hydrolysis in water under neutral conditions and ambient temperatures. OECD guideline studies indicate ready biodegradability for several glycol ethers although higher molecular weight species seem to biodegrade at a slower rate. No glycol ethers that have been tested demonstrate marked resistance to biodegradative processes. Upon release to the atmosphere by evaporation, high boiling glycol ethers are estimated to undergo photodegradation (atmospheric half lives = 2.4-2.5 hr). When released to water, glycol ethers undergo biodegradation (typically 47-92% after 8-21 days) and have a low potential for bioaccumulation (log Kow ranges from -1.73 to +0.51).

#### Ecotoxicity:

Aquatic toxicity data indicate that the tri- and tetra ethylene glycol ethers are "practically non-toxic" to aquatic species. No major differences are observed in the order of toxicity going from the methyl- to the butyl ethers.

Glycols exert a high oxygen demand for decomposition and once released to the environments cause the death of aquatic organisms if dissolved oxygen is depleted.

For diethylene glycol monoalkyl ethers and their acetates:

The diethylene glycol ethers are soluble in water. Octanol-water partition coefficients (log Kow values) range from -0.69 to +1.3. Henry's Law Constants range from 8.63 E-10 to 9.91 E-8 atm-m<sup>3</sup>/mole.

#### Environmental fate:

Estimated hydroxyl radical-induced atmospheric photodegradation half-lives range from 3.18 to 4.41 hours. DGEE, DGPE, and DGHE possess no functional groups in their molecular structures that are readily subject to hydrolysis in the presence of water. The acetate ester groups of DGEEA and DGBEA will hydrolyse, with the hydrolysis rate dependent on temperature, pH and possible presence of impurities that can act as catalysts for hydrolysis.

Level III fugacity modeling indicates that category members, when released to air and water, will partition to water (48.7-66.6%), soil (30.4-50.7%), air (0.52-2.88%), and sediment (0.08-0.15%). Estimates of soil and sediment partition coefficient (Kocs ranging from 1 - 10) suggest that category members would exhibit high soil mobility.

Estimated bioconcentration factors (log BCF) range from 0.299 to 0.609. Category members for which adequate data are available (DGEE, DGHE and DGBEA) are readily biodegradable. These physicochemical and environmental fate properties indicate that category members will not persist in the environment or bioaccumulate.

#### Ecotoxicity:

The aquatic toxicity data for the diethylene glycol ethers (DGEE, DGPE and DGHE) and diethylene glycol ether acetates (DGEEA and DGBEA) are considered separately because diethylene glycol ether acetates do not hydrolyse readily in water at

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environmental conditions. The EC/LC50 values for the diethylene glycol ethers in fish range from 200 (for DGHE) to > 5000 mg/l (for DGPE and DGEE). In invertebrates, values range from 433 for DGHE to > 10,000 mg/l for DGEE and DGPE. No algae data are available for the category members; based on data from supporting chemicals, toxicity is expected to be > 100 mg/l for DGHE and > 500 mg/l for other category members.

The LC50 values for fish are 110 mg/l for DGEEA and 77 mg/l for DGBEA. Measured or estimated values for invertebrates are higher (665 mg/l measured for DGBEA, with higher estimated values for both chemicals). No algae data are available for the acetates; based on experimental data for EGBEA, EC50 values are expected to be > 500 mg/l.

log Kow 0.15-1.0

Koc: 75

Henry's atm m<sup>3</sup>/mol: 1.52E-09

BOD 5 if unstated: 0.25

COD: 2.08

log BCF: 0.46

WATER:

## Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Comcater Rat-Cjet Cleaner	No Data Available	No Data Available		
potassium hydroxide	No Data Available	No Data Available	LOW	
diethylene glycol monobutyl ether	LOW	No Data Available	LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

- - 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.
  - Treat and neutralise at an approved treatment plant.
  - Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).
  - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
  - Containers may still present a chemical hazard/ danger when empty.
  - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: CORROSIVE

**HAZCHEM:**

2X (ADG7)

Land Transport UNDG:

Class or division: 8

Subsidiary risk: None

UN No.: 1760

UN packing group: III

Shipping Name: CORROSIVE LIQUID, N.O.S. (contains potassium hydroxide)

**Air Transport IATA:**

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UN/ID Number:	1760	Packing Group:	III
Special provisions:	A3		
Shipping Name: CORROSIVE LIQUID, N.O.S. *(CONTAINS POTASSIUM HYDROXIDE)			
<b>Maritime Transport IMDG:</b>			
IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1760	Packing Group:	III
EMS Number:	F-A , S-B	Special provisions:	223 274
Limited Quantities:	5 L		
Shipping Name: CORROSIVE LIQUID, N.O.S.(contains potassium hydroxide)			

## Section 15 - REGULATORY INFORMATION

### POISONS SCHEDULE

S6

### REGULATIONS

#### Regulations for ingredients

#### **potassium hydroxide (CAS: 1310-58-3) is found on the following regulatory lists;**

"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix C","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals"

#### **diethylene glycol monobutyl ether (CAS: 112-34-5) is found on the following regulatory lists;**

"Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals"

#### **water (CAS: 7732-18-5) is found on the following regulatory lists;**

"Australia Inventory of Chemical Substances (AICS)","IMO IBC Code Chapter 18: List of products to which the Code does not apply","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals"

**No data for Comcater Rat-Cjet Cleaner (CW: 4958-5)**

## Section 16 - OTHER INFORMATION

### EXPOSURE STANDARD FOR MIXTURES

■ "Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration: ■ Composite Exposure Standard for Mixture (TWA) :100 mg/m<sup>3</sup>.

■ 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.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)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.

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