



MATERIAL SAFETY DATA SHEET

PRODUCT NAME **BRAKLEEN (BULK)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name CRC INDUSTRIES (AUST) PTY LIMITED
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Web Site http://www.crcind.com.au/
Synonym(s) CRC BRAKLEEN (BULK) • 5090 - PRODUCT CODE • 5091 - PRODUCT CODE • 5092 - PRODUCT CODE
Use(s) BRAKE CLEANER
MSDS Date 31 May 2007

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

RISK PHRASES

R11 Highly flammable.
R40 Limited evidence of a carcinogenic effect.
R51 Toxic to aquatic organisms.
R53 May cause long term adverse effects in the aquatic environment.

SAFETY PHRASES

S2 Keep out of reach of children.
S23 Do not breathe gas/fumes/vapour/spray (where applicable).
S36/37 Wear suitable protective clothing and gloves.
S61 Avoid release to the environment. Refer to special instructions / safety data sheets.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No. 1992 **DG Class** 3 **Subsidiary Risk(s)** 6.1
Pkg Group II **Hazchem Code** 3WE **EPG** 3A3

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredient | Formula | CAS No. | Content |
|---|---------------|---------------|---------|
| TETRACHLOROETHYLENE (PERCHLOROETHYLENE) | C2-Cl4 | 127-18-4 | 30-60% |
| PETROLEUM DISTILLATE(S) | Not Available | Not Available | 30-60% |
| KETONE | Not Available | Not Available | 10-30% |

PRODUCT NAME BRAKLEEN (BULK)**4. FIRST AID MEASURES**

| | |
|-------------------------|---|
| Eye | If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes. |
| Inhalation | If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing. |
| Skin | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor. |
| Ingestion | For advice, contact a Poisons Information Centre or a doctor (at once). If swallowed, do not induce vomiting. |
| Advice to Doctor | Treat symptomatically |

5. FIRE FIGHTING MEASURES

| | |
|---------------------------|--|
| Flammability | Highly flammable - explosive vapour. May evolve toxic gases (carbon oxides, hydrogen chloride, chlorine, phosgene, hydrocarbons) when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, pilot lights, heaters, naked lights, mobile phones etc. when handling. Earth containers when dispensing fluids. |
| Fire and Explosion | Highly flammable - explosive vapour. Evacuate area and contact emergency services. Toxic gases (hydrocarbons, carbon oxides, hydrogen chloride, chlorine and phosgene) may be evolved. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas. |
| Extinguishing | Dry agent, carbon dioxide or foam. Prevent contamination of drains or waterways. |
| Hazchem Code | 3WE |

6. ACCIDENTAL RELEASE MEASURES

| | |
|-----------------|---|
| Spillage | If spilt (bulk), contact emergency services. Wear splash-proof goggles, PVA/viton gloves, a Type A (Organic vapour) respirator or Air-line respirator, coveralls and rubber boots. Ventilate and clear area of all unprotected personnel. Eliminate heat and ignition sources, absorb spill with sand or similar and place in sealable containers for disposal. Prevent spill entering drains or waterways. |
|-----------------|---|

7. STORAGE AND HANDLING

| | |
|-----------------|---|
| Storage | Store in cool, dry, well ventilated area, removed from oxidising agents (eg. hypochlorites), acids, alkalis, active metals, direct sunlight, heat sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should be bunded and have appropriate ventilation systems. |
| Handling | Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

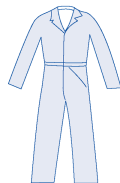
| Exposure Stds | Ingredient | Reference | TWA | | STEL | |
|---------------|-------------------|-------------|------|-------|-------|--------|
| | | | ppm | mg/m3 | ppm | mg/m3 |
| | Oil mists | NOHSC (AUS) | -- | 5.0 | -- | -- |
| | Perchloroethylene | NOHSC (AUS) | 50.0 | 340.0 | 150.0 | 1020.0 |

| Biological Limits | Ingredient | Reference | Determinant | Sampling Time | BEI |
|-------------------|---|-----------|--|---------------------------------------|----------|
| | TETRACHLOROETHYLENE E (PERCHLOROETHYLENE) | ACGIH BEI | Tetrachloroethylene in end -exhaled air | Prior to last shift of workweek | 5 ppm |
| | | ACGIH BEI | Tetrachloroethylene in blood | Prior to last shift of workweek | 0.5 mg/L |
| | | ACGIH BEI | Trichloroacetic acid in urine | End of shift at end of workweek | 3.5 mg/L |

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Engineering Controls Do not inhale vapours. Use in well ventilated areas. In poorly ventilated areas, mechanical extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard. Maintain vapour levels below the recommended exposure standard.

PPE Wear splash-proof goggles, viton (R) or PVA gloves and coveralls. Where an inhalation risk exists, wear a Type A (Organic vapour) Respirator. If spraying, wear a Type A-Class P1 (Organic gases/vapours and Particulate) Respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------|-------------------|---------------------------------|------------------|
| Appearance | COLOURLESS LIQUID | Solubility (water) | SLIGHTLY SOLUBLE |
| Odour | SLIGHT ODOUR | Specific Gravity | 0.93 |
| pH | NOT AVAILABLE | % Volatiles | 100 % |
| Vapour Pressure | 85 mm Hg | Flammability | HIGHLY FLAMMABLE |
| Vapour Density | > 1 (Air = 1) | Flash Point | < 0°C |
| Boiling Point | 56°C to 165°C | Upper Explosion Limit | 20 % |
| Melting Point | NOT AVAILABLE | Lower Explosion Limit | 2 % |
| Evaporation Rate | NOT AVAILABLE | Autoignition Temperature | > 500°C |

10. STABILITY AND REACTIVITY

Material to Avoid Incompatible with oxidising agents (eg. hypochlorites, peroxides), acids (eg. sulphuric acid), alkalis (eg. sodium hydroxide), active metals and heat sources.

Decomposition May evolve toxic gases (carbon oxides, hydrogen chloride, chlorine, phosgene, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Toxic - irritant. Use safe work practices to avoid eye or skin contact and vapour/mist inhalation. Over exposure may result in liver, kidney and CNS damage. Tetrachloroethylene is classified as probably carcinogenic to humans (IARC Group 2A).

Eye Irritant. Contact may result in irritation, lacrimation, pain, redness and conjunctivitis. Prolonged contact may result in corneal burns and possible permanent damage.

Inhalation Toxic - irritant - narcotic. Over exposure may result in upper respiratory tract irritation, nausea and headache. High levels; dizziness, breathing difficulties, anaesthesia, cardiac arrhythmias, pulmonary oedema, unconsciousness and possible respiratory failure. Chronic exposure may result in liver, kidney and CNS damage.

Skin Irritant. Contact may result in drying and defatting of the skin, rash and dermatitis. May be absorbed through skin with toxic effects.

Ingestion Toxic. Ingestion may result in nausea, vomiting, abdominal pain, dizziness, fatigue and diarrhoea. Ingestion of large quantities may result in liver and kidney damage, and unconsciousness. Aspiration may result in chemical pneumonitis and pulmonary oedema.

Toxicity Data TETRACHLOROETHYLENE (PERCHLOROETHYLENE) (127-18-4)
LD50 (Ingestion): 2629 mg/kg (rat)
LD50 (Skin): 65 gm/kg (mouse)

12. ECOLOGICAL INFORMATION

Environment Tetrachlorethylene is degraded fairly rapidly in the lower atmosphere (Half life ~ 5 months). It evaporates rapidly from open water systems but persists in ground water. It is toxic to aquatic organisms, however there is no potential for bioaccumulation.

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13. DISPOSAL CONSIDERATIONS

Waste Disposal For small amounts absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the manufacturer for additional information if larger amounts are involved. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION



CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

| | | | | | |
|----------------------|---------------------------------|---------------------|-----|---------------------------|-----|
| Shipping Name | FLAMMABLE LIQUID, TOXIC, N.O.S. | | | | |
| UN No. | 1992 | DG Class | 3 | Subsidiary Risk(s) | 6.1 |
| Pkg Group | II | Hazchem Code | 3WE | EPG | 3A3 |

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 6 (S6) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information IARC - GROUP 2A - PROBABLE HUMAN CARCINOGEN. This product contains an ingredient which has demonstrated sufficient evidence to have been classified by the International Agency for Research into Cancer (IARC) as a probable human carcinogen and whose use should be strictly monitored and controlled.

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ABBREVIATIONS:

- ADB - Air-Dry Basis.
- BEI - Biological Exposure Indices
- CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
- CNS - Central Nervous System.
- EINECS - European Inventory of Existing Commercial chemical Substances.
- IARC - International Agency for Research on Cancer.
- M - moles per litre, a unit of concentration.
- mg/m³ - Milligrams per cubic metre.
- NOS - Not Otherwise Specified.
- NTP - National Toxicology Program.
- OSHA - Occupational Safety and Health Administration.
- pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
- ppm - Parts Per Million.
- RTECS - Registry of Toxic Effects of Chemical Substances.
- TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

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PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Material Safety Data Sheet ('MSDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

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End of Report