



IVORYCHEM PTE LIMITED
15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

MATERIAL SAFETY DATA SHEET

RAZE 20 SL HERBICIDE

Version: Global
Date Approved: 08/13/1998
Revision No: 1

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RAZE® 20 SL HERBICIDE
ACTIVE INGREDIENT: Paraquat
CHEMICAL FAMILY: NA
CHEMICAL NAME OF ACTIVE INGREDIENT(S): (1,1'-dimethyl-4,4'-bipyridium ion) dichloride anion

MOLECULAR FORMULA: CH₃(C₅H₄N)₂CH₃.2Cl

SYNONYMS:

- 1,1'-Dimethyl-4,4'-bipyridinium dichloride
- 4,4'-Bipyridinium, 1,1'-dimethyl-, dichloride
- N,N'-Dimethyl-4,4'-bipyridinium dichloride
- Paraquat
- Paraquat (Paraquat dichloride)
- Paraquat chloride
- Paraquat dichloride

MANUFACTURER

IVORYCHEM PTE LTD
15 Beach Road, #02-09
Beach Centre
Singapore 189677
Tel: +65 63377765
Fax: +65 63377730

Emergency Telephone Numbers:

Emergency Phone contact@ivorychem.com (Please refer local label for Emergency Numbers in your region).

COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Wt.%	PEL/TLV	EC No.	EC Class
Paraquat		20	None	None	None
Other ingredients	-	80	None	None	None

HAZARDS IDENTIFICATION

SYMPTOMS OF ACUTE EXPOSURE: Irritant (skin with prolonged contact), irritant (eye,

Company Registration No: 200405572W
Incorporated in the Republic of Singapore Under the Companies Act (Cap 50)



IVORYCHEM PTE LIMITED

15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

respiratory passages), inhalation (TLV), toxic (oral). May be fatal if swallowed. Harmful if absorbed through skin. Causes substantial but temporary eye injury.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion products of dry material: carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

PHYSICAL PROPERTIES

Appearance: Bluish green to dark green liquid

Odor: Strong odor

Unusual Fire, Explosion and Reactivity Hazards: Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling a poison control center or doctor, or going for treatment.

INGESTION: SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an absorbent such as activated charcoal, bentonite or Fuller's Earth. Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling a poison control center or doctor. Do not give anything by mouth to an unconscious person.

EYE CONTACT: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INHALATION: If inhaled: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN: Administer either activated charcoal (100g for adults or 2 g/kg body weight in children) or Fuller's Earth (15% solution; 1 litre for adults or 15 ml/kg body weight in children). Note: The use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however, contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

MEDICAL CONDITION LIKELY TO BE AGGRAVATED BY EXPOSURE

None known.

FIRE FIGHTING MEASURES

FIRE AND EXPLOSION

Company Registration No: 200405572W
Incorporated in the Republic of Singapore Under the Companies Act (Cap 50)



IVORYCHEM PTE LIMITED

15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

Flash Point (Test Method): Not available
Flammable Limits (% in Air): Lower: % Not Applicable
Upper: % Not Applicable
Flammability: Does not flash
Autoignition Temperature: Not Available

UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZARDS

Hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

IN CASE OF FIRE

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Untreated spilled material can dry to a highly irritating dust. Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition

HANDLING AND STORAGE

Store above 32°F (0°C). Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

INGESTION: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after

**IVORYCHEM PTE LIMITED**

15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

handling.

EYE CONTACT: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SKIN CONTACT: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Bluish green to dark green liquid

ODOR: Strong Odor

MELTING POINT: Not Applicable

BOILING POINT: Not Applicable

SPECIFIC gravity/DENSITY: 1.12 g/cm³ @ 68°F (20°C)

pH: 4-8 (10 g/l in deionised water)

SOLUBILITY IN H₂O: 620 g/l @ 68°F (20°C)

VAPOR PRESSURE: 7.5 x 10⁽⁻⁸⁾ mmHg @ 77°F (25°C)

STABILITY AND REACTIVITY

STABILITY: Stable under normal use and storage conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Store above 32°F (0°C)

MATERIALS TO AVOID: hydrolyzes in alkaline media. This product reacts with aluminum to produce hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

TOXICOLOGICAL INFORMATION**ACUTE TOXICITY/IRRITATION STUDIES (FINISHED PRODUCT)**

Ingestion:	Moderately Toxic Oral (LD50 Rat) :	310 mg/kg body weight
Dermal:	Slightly Toxic Dermal (LD50 Rabbit) :	> 2,000 mg/kg body weight
Inhalation:	Highly Toxic Inhalation (LC50 Rat) :	0.0006 mg/l air - 4 hours

**IVORYCHEM PTE LIMITED**

15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Moderately Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

REPRODUCTIVE/DEVELOPMENTAL EFFECTS: None observed.

CHRONIC/SUBCHRONIC TOXICITY STUDIES: Rodent studies showed signs of irritation in 21-day dermal studies. In a 2.5 year chronic study, rats showed evidence of cataracts, body weight reduction and lung effects (alveolar macrophage infiltration) at 75 ppm and above. A 90-day dog diet study showed evidence of lung effects leading to alveolar collapse and death at 3 mg/kg/day. Chronic pneumonitis was seen in a 1-year dog study at 0.93 mg/g/day and above.

CARCINOGENICITY: No evidence in rat or mouse.

ECOLOGICAL INFORMATION

SUMMARY OF EFFECTS: Slightly to moderately toxic to fish. Moderately toxic to invertebrates. Practically non-toxic to birds and bees.

ECO-ACUTE TOXICITY:

- Bees LC50/EC50 48 ug/bee
- Invertebrates (Water Flea) LC50/EC50 4.0 ppm
- Fish (Trout) LC50/EC50 55 ppm
- Fish (Bluegill) LC50/EC50 13 ppm
- Birds (8-day dietary - Bobwhite Quail) LC50/EC50 981 ppm
- Birds (8-day dietary - Mallard Duck) LC50/EC50 4048 ppm

ECO-CHRONIC TOXICITY: Not Available

ENVIRONMENTAL FATE: The information presented here is for the active ingredient, paraquat dichloride. Low bioaccumulation potential. Persistent in soil. Not persistent in water. Immobile in soil. Sinks in water (after 24 h).

DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Open dumping is prohibited. Wastes resulting from the use of this product are acutely toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office.

CONTAINER DISPOSAL: Triple rinse (or equivalent) and offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke. For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedure and disposal of wastes.

TRANSPORT INFORMATION

Company Registration No: 200405572W
Incorporated in the Republic of Singapore Under the Companies Act (Cap 50)



IVORYCHEM PTE LIMITED

15 Beach Road #02-09, Beach Centre
Singapore 189677
Tel: +65 – 6337 7765
Fax: +65 – 6337 7730
Email: contact@ivorychem.com
Web: www.ivorychem.com
Co. Registration No. 200405572W
GST Registration No. 200405572W

DOT CLASSIFICATION

Ground Transport - NAFTA
Packages less than 3200 gal. - Not regulated.
Packages larger than 3200 gal.
Proper Shipping Name: Corrosive liquid, toxic, N.O.S. (Paraquat)
Hazard Class or Division: Class 8
Identification Number: UN 2922
Packing Group: PG III
Air Transport - NAFTA
Not regulated in less than 3200 gal. packages.

B/L FREIGHT CLASSIFICATION

Herbicides, NOIBN

COMMENTS

Water Transport - International
Proper Shipping Name: Corrosive liquid, toxic, N.O.S. (Paraquat)
Hazard Class or Division: Class 8
Identification Number: UN 2922
Packing Group: PG III

AIR TRANSPORT - INTERNATIONAL

Proper Shipping Name: Corrosive liquid, toxic, N.O.S. (Paraquat)
Hazard Class or Division: Class 8
Identification Number: UN 2922
Packing Group: PG III
Packing Instructions: Passenger -818, Cargo 820
Packing limitations: Inner packages over 5 litres, and single packages over 60 litres cannot be shipped by cargo aircraft. Inner packages over 2,5 liters and single packages over 5 litres cannot be shipped by passenger aircraft.

REGULATORY INFORMATION

CERCLA/SARA 302 REPORTABLE QUANTITY (RQ)

Report product spills > 5 gal. (based on paraquat dichloride [RQ = 10 lbs.] content in the formulation)

RCRA HAZARDOUS WASTE CLASSIFICATION (40 CFR 261)

Corrosive D002

TSCA STATUS

Exempt from TSCA, subject to FIFRA

OTHER INFORMATION

Section(s) Revised : New Format