

MATERIAL SAFETY DATA SHEET

Introductory Details

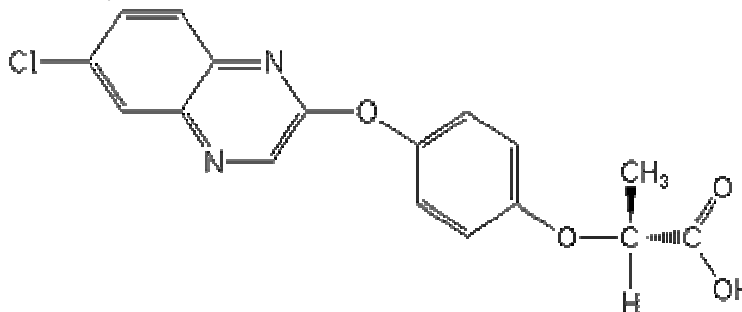
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Date of preparation : 21 October 2008

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Quizalofop-P-ethyl 5% EC
Trade Name : TARGASAN
Chemical Name : (IUPAC) Ethyl (R)-2-[4-(6-chloroquinoxalin-2-yloxy)phenoxy]
propionate
Chemical Formula : $C_{19}H_{17}ClN_2O_4$
Molar Mass : 372.81
Chemical Family :
Manufacturer's Code : DS815
Use : Herbicide
Structural Formula :



Quizalofop-P-ethyl

1.2 Company Identification

Manufacturer

Name and Address : Nissan Chemical Industries, Ltd.
Kowa Hitotsubashi Building
7-1, 3-chome, Kanda-Nishiki-cho, Chiyoda-ku,
Tokyo 101-0054, Japan

Telephone Number : +81-3-3296-8151

Emergency Telephone Number : -

Importer/Distributor

Name and Address : Agricultural Chemicals (M) Sdn. Bhd.
962, Lorong Perusahaan 8, Taman Perindustrian Perai,
13600 Perai, Pulau Pinang, MALAYSIA.

Telephone Number : 604-3907988

Emergency Telephone Number : 604-3907988

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1.3 Contact Point

Designation : Ms Cheong Wai Ching, Product Support Manager /
En. Ahmad Labib bin Yusof, Administrative Assistant

Tel. No. : 604-390 7988

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No.	Proportion	Exposure Limit	Toxicity Data
Ethyl (R)-2-[4-(6-chloroquinoxalin-2-yloxy)phenoxy] propionate	100646-51-3	5%	Refer to Section 9	Refer to Section 11
Emulsifier and aromatic hydrocarbons	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Brownish oily clear liquid
Odour : Aromatic
Solubility : Miscible with water
Boiling Point : No data available
Melting Point : No data available
Vapour Pressure : 0.278 kPa at 20°C (data of the solvent)
Percentage Volatiles : No data available
Evaporation Rate : No data available
Vapour Density : 1.00 (data of the solvent)
Specific Gravity : 0.962 g/ml at 20°C
Flash Point : 53°C
Autoignition Temperature : 440°C
Flammable Limit : No data available
Explosion Limit : Between 0.8 and 7 vol% (in air) (data of the solvent)
Explosive Properties : Not explosive
Oxidising Properties : Not oxidising
pH : 7.8 (1% aqueous dispersion)
Partition Coefficient : Log Pow 4.61 at 23°C (n-octanol/water) (quizalofop-P-ethyl)
Viscosity : No data available
Other Information : This product is flammable

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SECTION 4 : HAZARD IDENTIFICATION

Flammable
Harmful by inhalation
Irritating to skin
Risk of serious damage to eyes
May cause sensitization by skin contact

SECTION 5 : FIRST AID MEASURES

Ingestion : Rinse mouth with water. Do not induce vomiting. Seek medical advice immediately. Do not give anything by mouth to an unconscious person.

Eye contact : Immediately rinse with running water for at least 15 minutes. Seek medical advice.

Skin contact : Remove all contaminated clothing, shoes and socks from the affected area. Immediately rinse with running water. Wash skin thoroughly with soap and water. If irritation persists, seek medical advice.

Inhalation : If respiratory discomfort occurs, move the person to fresh air. If not breathing, give mouth-to-mouth resuscitation (or an artificial respiration). Keep warm with blanket and keep at rest. Seek emergency medical advice.

Notes to physician : This material contains light hydrocarbon liquid and an aspiration hazard may exist. Treatment is symptomatic and supportive. In the event of a mouthful or more being ingested, gastric lavage with charcoal should be considered.

General advice : Remove contaminated, soaked clothing immediately and disposal of safely.

SECTION 6 : FIRE FIGHTING MEASURES

Extinguishing media : Water, CO₂, foam, dry powder. DO NOT USE HIGH VOLUME WATER JET.

Fire fighting instruction : Fire fighters should wear full-faced self-contained breathing apparatus and protective clothing.

Special hazards : Combustion can form carbon monoxide, nitrogen oxides and hydrogen chloride.

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SECTION 7 : ACCIDENTAL RELEASE MEASURE

Leak and/or Spill :

Wear protective clothing (refer Section 9). Eliminate ignition source. Ventilate area. Absorb spills with inert material such as clay, sand, earth, sawdust etc. and collect in a drum. Cover up the contaminated area with household detergent and small amount of water. Brush the slurry and spread inert absorbents on the slurry liquid and collect the absorbed material in a drum. Seal drum and dispose of. Do not contaminate water resources.

SECTION 8 : HANDLING AND STORAGE

Handling : No specific precautions required when handling unopened packs/containers. Provide good ventilation of working area (local exhaust ventilation if necessary). Protect containers against physical damage. Wear suitable protective clothing, shoes, gloves and goggles during handling. Do not eat, drink or smoke during the work. This product is flammable. Keep away from source of ignition. Vapour may form explosive mixture with air. Prevent spillage from entering the drainage systems or watercourses.

Storage : Keep tightly close in original labeled container.
Keep away from heat and open flame.
Keep away from direct sunlight.
Keep away from direct contact with water.
Protect against frost.
Keep away from the reach of children.
Keep away from foods, drinks and animal feeding stuffs.

SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure limit : Not established for this product
(aromatic hydrocarbon in the product: TWA 100 mg/m³ (19 ppm))

Engineering measures : Local exhaust ventilation

Personal protection :

Respiratory protection : Filter apparatus (a half face filter mask, filter type A)

Hand protection : Chemical resistant gloves, nitril gloves

Eye protection : Chemical resistant glasses or goggles

Skin/body protection : Impervious clothing such as gloves, apron or PVC boots

Hygiene measures : Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Work in an adequately ventilated room.

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SECTION 10 : STABILITY AND REACTIVITY

Conditions to avoid : Stable under normal storage conditions. Avoid high temperature.
Incompatible : May react with strong bases, acids or strong oxidizing agents, such as chlorates, nitrates, peroxides.
Decomposition products : No hazardous reaction when stored and handled according to recommendation.
Hazardous polymerization : No data available.

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicity Data :
Acute oral toxicity LD₅₀ (rat) 2,551/2,728 mg/kg (M/F)
Acute oral toxicity LD₅₀ (mice) 3,668/4,940 mg/kg (M/F)
Acute dermal toxicity LD₅₀ (rat) >2,000 mg/kg (M/F)
Inhalation LC₅₀ (rat) 2.91 mg/L (R20)
Mutagenic Effect : Negative (data of Quizalofop-P-ethyl)
Carcinogenicity : No carcinogen (based on the racemate) (data of Quizalofop-P-ethyl)
Reproductive Effect : No data available
Effects of overexposure:
Skin Irritation : Irritation (R38)
Eye Irritation : Irritation (R41)
Sensitization : Moderate skin sensitization (R43)
Chronic effects : (2-Year) NOEL (rats) 0.9/1.1 mg/kg/day (M/F) (based on the racemate) (data of Quizalofop-P-ethyl)
Target organs : No data available.
Medical Conditions Generally Aggravated by exposure : No data available

SECTION 12 : ECOLOGICAL INFORMATION

Mobility & Bioaccumulation : No data available
Biodegradability : No data available
Aquatic toxicity :
Fish (Rainbow trout) LC₅₀ (96 h) 5.8 mg/L
Daphnia magna EC₅₀ (48 h) 8.0 mg/L
Algae EC₅₀ (72 h) 1.27 mg/L
The following is data of the active ingredient, quizalofop-P-ethyl.
Bird (Mallard duck) LD₅₀ >2,000 mg/kg
Bee LD₅₀ (Oral/Contact) >100 µg/bee

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SECTION 13 : DISPOSAL INFORMATION

Dispose of according to local regulation.

SECTION 14 : TRANSPORT INFORMATION

Follow the precaution indicated in the storage and handling section. Follow all regulations in your country.

IMDG

UN No. : 1993
Class : 3
Packaging Group : III
Ems : 3-07
Hazard Label : Flammable Liquid (H)
Marine Pollutant Label : Marine Pollutant
Proper Shipping Name : Flammable Liquid n.o.s. (quizalofop-P-ethyl 5%/aromatic hydrocarbon)

ICAO/IATA

UN No. : 1993
Class : 3
Packaging Group : III
Proper Shipping Name : Flammable Liquid n.o.s. (quizalofop-P-ethyl 5%/aromatic hydrocarbon)

ADR/RID

UN No. : 1993
Class : 3
Packaging Group : III
Hazard No. : 30
Proper Shipping Name : UN 1993 Flammable Liquid n.o.s. (quizalofop-P-ethyl 5%/aromatic hydrocarbon)

ADNR

UN No. : 1993
Class : 3
Packaging Group : III
Proper Shipping Name : UN 1993 Flammable Liquid n.o.s. (quizalofop-P-ethyl 5%/aromatic hydrocarbon)

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SECTION 15 : REGULATORY INFORMATION

Pesticides Act : Class III
CPL Regulation : Class – Flammable, Harmful

Risk Phrases : R10 Flammable
R20 Harmful by inhalation
R38 Irritating to skin
R41 Risk of serious damage to eyes
R43 May cause sensitization by skin contact

Safety Phrases : S2 Keep out of reach of children
S13 Keep away from food, drink and animal feeding stuff
S16 Keep away from sources of ignition – No Smoking
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S37/39 Wear suitable gloves and eye/face protection
S57 Use appropriate containment to avoid environmental contamination

SECTION 16 : OTHER INFORMATION

Reference : (a) Material Safety Data Sheet – Targa Super 5EC
Date prepared: September 13, 1994
Revised: November 11, 2005

(b) Guidelines for The Classification of Hazardous Chemicals, DOSH 1997

(c) Guidelines for The Formulation of A Chemical Safety Data Sheet, DOSH 1997

(d) Guidelines for Labelling of Hazardous Chemicals, DOSH 1997

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.