


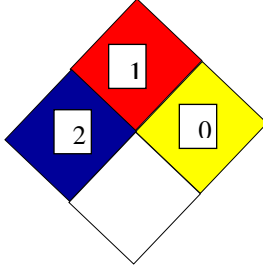


Safety Data Sheet


Revision date: 27.12.2014

Date of issue: 21.12.2009


Sr. No.	Title of the section	Information required in this section
1.	Identification of the substance & of the company	
1.1	Identification of the substance or preparation	1.1.1 Trade Name : Sharda Propiconazole Technical 1.1.2 EPA Registration No.: 82633-13
1.2	Other identification	1.2.1 Substance name: (±)-1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole 1.2.2 CAS No.: 60207-90-1
1.3	Use of the substance/ preparation	1.3.1 Recommended uses: ✓ formulation into fungicides ✓ Propiconazole is a systemic foliar fungicide. Agricultural fungicide 1.3.2 Restricted uses: Not known as on date
1.4	Company/ under - taking identification	1.4.1 Company name: Sharda Cropchem Ltd. 1.4.2 Contact Person : Sharon Gunning, Director, Supply Chain and Administrative Operations 1.4.3 Manufacturing site address: 1 st Floor Domnic Holm, 29th Road, Bandra West, Mumbai 400050 India 1.4.4 Telephone number: +91 22 5678 2800 1.4.5 Fax number : +91 22 5678 2828, +91 22 5678 2808 1.4.6 e-mail : shardain@vsnl.com ; WEBSITE: www.shardaintl.com
1.5	Emergency telephone	1.5.1 Emergency telephone number : 1(800) 222-1222 CHEMTREC PHONE: 1(800) 424-9300 1.5.2 Telephone number of USA importer: (610) 350-6930 1.5.3 Opening hours: 24 hrs
2.	Hazard Identification	
2.1	Classification of the substance according to Regulation 1910.1200 [GHS]	Acute Tox. 4 – Oral (H302 – Harmful if swallowed) Skin Sens. 1 - (H317 – May cause an allergic skin reaction) Aquatic Acute 1 (H400 – Very toxic to aquatic life) Aquatic Chronic 1 (H410 – Very toxic to aquatic life with long lasting effects)
2.2	Label elements : Labelling in accord with paragraph (f) of 1910.1200	2.2.1 Signal word – Warning 2.2.2 Hazard statements – H302 – Harmful if swallowed H317 – May cause an allergic skin reaction H410 – Very toxic to aquatic life with long lasting effects 2.2.3 Hazard pictograms –   GHS07 GHS09 2.2.4 Precautionary statements – P264 – Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product. P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if feeling unwell. P330 - Rinse mouth P501 - Dispose of contents/ container to an approved waste disposal plant P273 - Avoid release to the environment. P391 - Collect spillage P261 – Avoid breathing dust/fume/ gas/mist/vapours/spray P272 - Contaminated work clothing should not be allowed out of the workplace. P280 – Wear protective gloves/ protective clothing/eye protection/face protection P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P333 + P313 – If skin irritation or rash occurs: Get medical advice/attention. P321 – Specific treatment (see applicable details on the label)

		P363 – Wash contaminated clothing before reuse.
2.3	Other Information	<p>Hazard Ratings : NFPA Health: 2 Flammability: 1 Reactivity: 0</p> <p>Hazard Ratings : HMIS Health: 2 Flammability: 1 Reactivity: 0</p> <p>ROUTES OF ENTRY: Ingestion, Dermal, Absorption, Inhalation</p>
		 
3. Composition /Information on Ingredients		
3.1	Composition	<p>Chemical name : (±)-1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole</p> <p>Chemical Formula : C₁₅ H₁₇Cl₂ N₃O₂</p> <p>Molecular weight : 342.23</p> <p>CAS no. : 60207-90-1</p> <p>% concentration : 95 %</p>
3.2	Common name and synonyms	<p>Chemical Name : Propiconazole CHEMICAL FAMILY: triazole Synonyms :</p> <ul style="list-style-type: none"> • 1-[[2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole; • 1-(2-(2',4'-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl-methyl)-1H-1,2,4-triazole; • 1,2,4-Triazole, 1-((2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl)methyl)-; • Banner; • CGA-64250; • Desmel; • Orbit; • Proconazole; • Propiconazole Tilt; • Wocosin; • Propiconazole E.C.; • (1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole; • 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole
3.3	Classified Impurities and stabilizing additives contributing to classification of the chemical	No major known impurity have Carcinogen, Mutagen & Reprotoxic (CMR) classification which can contribute to the Classification & Labelling of the chemical.
4. First Aid Measures		
4.1	Description of first aid measures	<p>- Inhalation: Remove source of contamination or move victim to fresh air. Keep victim warm and at rest. Treat symptomatically and supportively. Obtain medical advice if necessary.</p> <p>- Skin contact: Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with water and non-abrasive soap. Persons who become sensitised may require specialised medical management with anti-inflammatory agents.</p> <p>- Eye contact: Immediately flush the eyes with gently flowing lukewarm water or saline solution for 20 minutes, occasionally lifting the upper and lower lids. Specialised ophthalmologic treatment might be required.</p> <p>- Oral: Do not induce emesis. Seek medical advice</p>
4.2	Important symptoms & effects	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3	Immediate medical attention	<p>Notes for the doctor: Gastric lavage may be indicated. Administer charcoal slurry, aqueous or mixed with saline cathartic or sorbitol.</p> <p>For 24-hour medical emergency assistance (human or animal) call 1-800-222-1222. For chemical emergency assistance (spill, leak, fire, or accident) call ChemTrec at 1-800-424-9300.</p>
5.	Fire Fighting Measures	
5.1	suitable extinguishing media	Carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product
5.2	Special hazard arising from the chemical	Toxic carbon and nitrogen oxides
5.3	Special protective equipment and precautions for firefighters	As in any fire, wear full protective clothing and self-contained breathing apparatus with full face piece operated in pressure-demand or other positive pressure mode.
6.	Accidental Release Measures	
6.1	Personal precautions, protective equipment and emergency procedures	<p>6.1.1 For non-emergency personnel</p> <ul style="list-style-type: none"> ➤ Personal precautions: Avoid contact with skin and eyes. Do not breathe in fumes. Ventilate area of spill or leak, especially confined areas. Shut off/remove any ignition sources. For personal protection see Section 8. ➤ Environmental precautions: Do not allow to enter drains or water courses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations. <p>6.1.2 For emergency responders: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Do not touch the spilled material. Avoid the spread of the spillage by using adsorbents, if this can be done without risks. Ground all equipment containing material.</p>
6.2	Methods and material for containment and cleaning up	<p>Small Spill: Absorb small spills with sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.</p> <p>Large Spill: Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify and scrape up for disposal. Pick up wash liquid with additional absorbent and place in a disposable container. After removal, flush contaminated area thoroughly with water. This material should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.</p>
7.	Handling and Storage	
7.1	Precautions for safe handling	<p>7.1.1. Recommendations shall be specified to:</p> <p>Remove sources of naked flame or sparks. Avoid contact with eyes, prolonged contact with skin, and inhalation of fumes and spray particles. Use with adequate ventilation. Do not apply directly to areas where surface water is present. Water used to clean equipment must be disposed of correctly to avoid contamination.</p> <p>7.1.2. Advice on general occupational hygiene:</p> <ol style="list-style-type: none"> (a) not to eat, drink and smoke in work areas (b) to wash hands after use; and (c) To remove contaminated clothing and protective equipment before entering eating areas
7.2	Conditions for safe storage, including any incompatibilities	<p>(a) How to manage risks associated with storage :</p> <p>Storage: Refrigerator Storage Temperature : APPROX 4°C</p> <p>(b) Other advice including: Do not contaminate water, food, or feed by storage or disposal. Store in cool place. Keep container tightly closed in a dry and well-ventilated place.</p>

		(c) Storage stability: Stable for 2 years under recommended storage conditions
8.	Exposure Controls / Personal Protection	
8.1	Control parameters	OSHA permissible exposure limit (PEL): Not available American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV): Not available Syngenta Exposure Standards : 8 mg/m ³ for 8 h TWA
8.2	Exposure controls	
8.2.1	Appropriate engineering controls	It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.
8.2.2	Individual protection measures	<p>(a) Eye / face protection: Wear appropriate protective eyeglasses, splash goggles or chemical safety goggles and face shield.</p> <p>(b) Skin protection: Wear appropriate protective clothing like impervious lab coat, apron or coveralls.</p> <p>(i) Hand protection: Use compatible chemical / solvent resistant protective gloves made of suitable materials like rubber, plastic, etc.,</p>  <p>(ii) Other: Wear appropriate boots and other footwear.</p> <p>(c) Respiratory protection: In case of brief exposure or low pollution, use respiratory filter device. In case of intensive or longer exposure, use self-contained respiratory protective device. Short term filter device: Filter AX. In case of emergency spills, use a NIOSH approved respirator with any N, R, P, or HE filter.</p> <p>(d) General protective and hygienic measures:</p> <ul style="list-style-type: none"> • Keep away from foodstuffs, beverages and feed. • Immediately remove all soiled and contaminated clothing. • Wash hands before breaks and at the end of work. • Store protective clothing separately.
9.	Physical & Chemical Properties	
9.1	Information on basic physical and chemical properties	<p>(a) Appearance: Yellow colour clear viscous liquid</p> <p>(b) Odour: Not specified</p> <p>(c) Auto-ignition temperature: Not applicable</p> <p>(d) pH: 6.01</p> <p>(e) Melting point/freezing point: - 50°C</p> <p>(f) boiling point / boiling range: 479.9°C at 760 mmHg</p> <p>(g) Flash point: 237.2°F</p> <p>(h) Vapour pressure : 2.26E-09mmHg at 25°C</p> <p>(i) Flammability (solid, gas): Not applicable</p> <p>(j) Upper/lower flammability or explosive limits: Not applicable</p> <p>(k) Solubility(ies): (water) 164.2 mg/L @ 20 deg C</p> <p>(l) Partition coefficient: n-octanol/water: 3.5 (Log Kow)</p> <p>(m) Density: 1.39g/cm³</p> <p>(n) Dissociation constant (pKa) : 1.09</p>
9.2	Other information	Specific Gravity (H ₂ O = 1): 1.29 @ 20 deg C Refractive index: 1.623
10.	Stability and Reactivity	
10.1	Reactivity	Not known
10.2	Chemical stability	Stable at normal temperature and pressure
10.3	Possibility of	No information known

	hazardous reactions	
10.4	Conditions to avoid	Avoid temperatures above 150°F and below 20° F. Avoid contact with oxidizing alkaline and acidic conditions and materials.
10.5	Incompatible materials	Strong oxidizing agents
10.6	Hazardous decomposition products	Thermal decomposition may produce toxic carbon and nitrogen oxides, and hydrogen chloride.
11.	Toxicological Information	
11.1	Information on toxicological effects	(a) acute toxicity: ✓ Oral toxicity in category 4 as per GHS classification (b) skin corrosion/irritation: Not irritant (c) serious eye damage/irritation: Not irritant (d) respiratory or skin sensitization: Sensitizing (e) germ cell mutagenicity: no evidence in vivo assays (f) carcinogenicity: No evidence of carcinogenicity in rat/ mouse studies (g) Reproductive/ developmental toxicity: No evidence via oral route. (h) STOT-SE/RE: No specific target organ toxicity known indicating permanent deformity
11.2	Numerical measures of toxicity (such as acute toxicity estimates)	Oral LD50 (male rat) = 1,517 mg/Kg Dermal LD50 (rat) = > 2,000 mg/Kg Inhalation LC50 (rat) = > 2.0 mg/L (4-hr) Skin Sensitization: May cause allergic skin reaction – Qualitative in-vivo study Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
11.3	Chemical if, listed in NTP or IARC or by OSHA as Carcinogens	The chemical is not a listed carcinogen
12.	Ecological Information	
12.1	Eco – Toxicity	Fish (ChV) = 0.024 mg/L Fish (Rainbow Trout) 96 hrs LC50 = 0.83 ppm Daphnia (ChV) = 0.120 mg/L Algae (ChV) = 0.354 mg/L Green algae 9 days EC 50 = 0.72 ppm
12.2	Persistence and degradability	Probability of Rapid Biodegradation (BIOWIN v4.10): Biowin1 (Linear Model) : -0.6589 Biowin2 (Non-Linear Model) : 0.0000 Expert Survey Biodegradation Results: Biowin3 (Ultimate Survey Model): 1.8002 (months) Biowin4 (Primary Survey Model) : 2.8504 (weeks) MITI Biodegradation Probability: Biowin5 (MITI Linear Model) : -0.0012 Biowin6 (MITI Non-Linear Model): 0.0037 Anaerobic Biodegradation Probability: Biowin7 (Anaerobic Linear Model): -1.3765 Ready Biodegradability Prediction: NO
12.3	Bioaccumulative potential	Bioaccumulation Estimates (BCFBAF v3.01): Log BCF from regression-based method = 2.121 (BCF = 132.3 L/kg wet-wt) Log Biotransformation Half-life (HL) = 0.7927 days (HL = 6.204 days) Log BCF Arnot-Gobas method (upper trophic) = 2.641 (BCF = 437.8) Log BAF Arnot-Gobas method (upper trophic) = 2.644 (BAF = 440.5)

		log Kow used: 3.72 (expkow database) Propiconazole has low to medium potential to bioaccumulate
12.4	Mobility in soil	Degradation half-life 66-170 days; Not persistent in soil Propiconazole has low to medium mobility in soil
12.5	Other adverse effects	Propiconazole are mineralized by soil micro organisms
13.	Disposal Considerations	
13.1	Waste treatment methods	<p>(a) Waste treatment containers and methods: <u>Waste Disposal Method:</u> Product disposal – Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Pesticide, mixtures, or equipment rinse water that cannot be chemically reprocessed must be disposed of according to applicable federal, state or local regulations. Contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance. <u>Container disposal</u> – Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.</p> <p>(b) Sewage disposal: Sewage disposal shall be discouraged</p>
13.2	Additional information:	RCRA HAZARD CLASS: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
14.	Transport Information	
	(Information includes RID, ADR, AND, ICAO, IMDG, IATA-DGR)	<p>14.1. UN number : 3082 (ADR/RID; IMDG; IATA; DOT)</p>  <p>14.2. UN proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Propiconazole)</p> <p>14.3. Transport hazard class(es): 9</p> <p>14.4. Packing group :III</p> <p>14.5. Environmental hazards (e.g., Marine pollutant (Yes/No)) : Yes</p> <p>14.6. Special precautions for user : Not required</p> <p>14.7. Quantity specification : for single packaging's and combination packaging's containing inner packaging's with Dangerous Goods > 5L for liquids or > 5kg for solids</p>
15.	Regulatory Information	
15.1	Safety, health and environmental regulations/legislation	<ul style="list-style-type: none"> • Product related hazard information : The product has been classified and marked in accordance with directives on hazardous materials • Hazard statements: <ul style="list-style-type: none"> ✓ May be fatal if swallowed. ✓ Harmful if absorbed through skin. ✓ Causes moderate eye irritation. ✓ Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. • Signal word – WARNING • Precautionary statements : <ul style="list-style-type: none"> ✓ Avoid contact with skin, eyes or clothing. ✓ Wear long sleeved shirt, pants, pants, socks, shoes and waterproof gloves. ✓ Wear protective eyewear. ✓ Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. ✓ Remove and wash contaminated clothing before reuse. • Other regulations: Listed /not listed within the following regulation

		<ul style="list-style-type: none"> ✓ TSCA (TOXIC SUBSTANCE CONTROL ACT) - listed ✓ EU CLP Regulation (EC) No 1272/2008 - listed ✓ South African National Road Traffic Act, 1996(Act 93 of 1996) – listed ✓ CERCLA (Comprehensive Response Compensation, And Liability Act): NA ✓ SARA TITLE III (Superfund Amendments And Reauthorization Act) 302: NA ✓ IARC Carcinogens :Not Listed ✓ U.S. NTP Carcinogens : Not Listed ✓ California Prop 65 Known Carcinogens : Not Listed ✓ U.S. EPA Carcinogens : C, Possible ✓ TRI Carcinogen Not Listed
16.	Other Information	
16.1	Indication of changes	<p>Section 1: Identification of the substance/mixture and of the company/undertaking</p> <p>Section 2: Hazard Identification - Changes in Classification and Labelling.</p> <p>Section 3: Composition /Information on Ingredients</p> <p>Section 5: Fire-fighting measures</p> <p>Section 6: Accidental Release measures</p> <p>Section 7: Handling and storage.</p> <p>Section 8: Exposure Controls/Personal protection.</p> <p>Section 9: Physical and Chemical properties.</p> <p>Section 10: Stability and Reactivity.</p> <p>Section 11: Toxicological Information.</p> <p>Section 12: Ecological Information.</p> <p>Section 14: Transport labeling</p> <p>Section 15: Regulatory Information</p>
16.2	Abbreviations and acronyms	<ul style="list-style-type: none"> • OSHA: Occupational Safety and Health Administration • GHS: Globally harmonized system on classification and labelling • TWA: Time Weighted Average • STEL: Short Term Exposure Limit • PEL: Permissible Exposure Limits • ACGIH: American Conference of Governmental Industrial Hygienists • NIOSH: National Institute for Occupational Safety and Health • TLV: Threshold Limit Value • MARPOL: Marine pollution • IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk • IARC: International Agency for Research on Cancer • NTP: National Toxicology Program • CAS: Chemical Abstracts Service (division of the American Chemical Society) • LC50: Lethal concentration, 50 percent • LD50: Lethal dose, 50 percent • IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association • IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA) ICAO: International Civil Aviation Organization • ICAO-TI: Technical Instructions by the "International Civil Aviation Organization"
16.3	Key literature references and sources for data	<ul style="list-style-type: none"> • http://www.t3db.ca/system/msds/attachments/000/001/890/original/T3D3910.pdf?1413587764 • http://www.chemicalbook.com/CASEN_60207-90-1.htm • http://www.guidechem.com/msds/60207-90-1.html • http://livingturf.com.au/wp-content/uploads/2014/02/Instrata-MSDS.pdf • http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=45642&brand=FLUKA&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fsearch%3Fterm%3D60207-90-1%26interface%3DCAS%2520No.%26N%3D0%26mode%3Dmatch%2520partialmax%26lang%3Den%26region%3DIN%26focus%3Dproduct • Child, R., et al.: Plant Growth Regul., 13, 203 (1993), Jaleel, C., et al.: Plant Sci., 171, 271 (2006), Jaleel, C., et al.: Pestic Biochem. Physiol., 91, 170 (2008), • http://www.chemnet.com/cas/en/60207-90-1/Propiconazole.html

		<ul style="list-style-type: none">• http://www.chemicalbook.com/CASEN_60207-90-1.htm• EPI Suite calculation• http://www.syngentacropprotection.com/env_stewardship/futuretopics/Prop8-16-05.pdf• PBT profiler• http://www.pesticideinfo.org/List_Chemicals.jsp?
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Disclaimer: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. The information above is believed to be accurate and represents the best information currently available to us. No representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This SDS shall be used as a guide only. Users should make their own investigations to determine the suitability of the information for their particular purposes. Consult Sharda Cropchem Ltd. for further information.