Safety Data Sheet

Revision date: 07.04.2015 Date of issue: 02.04.2015

Sr. No.	Title of the section	Information required in this section			
1.	Identification of the	ication of the mixture & of the company			
1.1	Identification of the substance or preparation	1.1.1 Trade Name: Sharda Fomesafen 2 SL ABN: SHAFEN Herbicide 1.1.2 Product Registration No.: 83529-16			
1.2	Use of the substance/ preparation	1.2.1 Recommended uses: ✓ Herbicide 1.2.2 Restricted uses: Not known as on date			
1.3	Company/ under - taking identification	1.3.1 Company name: Sharda USA LLC 1.3.2 Contact Person: Sharon Gunning, Director, Supply Chain and Administrative Operations 1.3.3 Manufacturing site address: Universal Cooperatives, Inc. 1253 Independence Dr, Napoleon OH 43545 1.3.4 Telephone number: +91 22 5678 2800 1.3.5 Fax number: +91 22 5678 2828, +91 22 5678 2808 1.3.6 E-mail: shardain@vsnl.com ; WEBSITE: http://www.shardausa.com			
1.4	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]	Classification: Eye Damage 1, Skin Irritation 2, Skin Sensitization 1 Hazard statement: H318 – Causes serious eye damage H315 - Causes severe skin burns and eye damage H317 – May cause an allergic skin reaction Signal Word: Warning Hazard pictograms: Precautionary statements: P264 – Wash face, hands and any exposed skin thoroughly after handling P280 – Wear protective gloves/ protective clothing/eye protection/face protection. P302 + P352 – IF ON SKIN: Wash with plenty of soap and water. P332 + P313 – If skin irritation occurs: Get medical advice/attention P321 – Specific treatment (Reference to supplemental first aid instruction on the label). P362 – Take off contaminated clothing and wash before reuse. P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P261 – Avoid breathing dust/fume/gas/mist/vapours/ spray. P272 – Contaminated work clothing should not be allowed out of the workplace.			
2.2	Other Information	P310 – Immediately call a POISON CENTER or doctor/physician. Hazard Ratings: NFPA Health: 3 Flammability: 0 Reactivity: 0 Hazard Ratings: HMIS Health: 3 Flammability: 0 Reactivity: 0 Reactivity: 0			

3.	Composition /Inform	osition /Information on Ingredients				
		List of raw materials in the mixture with hazardous and non-hazardous additional				
		% Conc.	CAS no.	Substance name		
	Composition	22.8%	108731-70-0	Fomesafen Sodium		
3.1	Composition	4%	1310-73-2	Sodium Hydroxide		
		10%	NA	AU-225 (alkyl polyglycosides and non-ionic coupling agents)		
		0.05%	NA	Silicone emulsion		
		0.05%	2634-33-5	1,2-benzisothiazolin-3-one		
		63.74%	7732-18-5	Water		
3.2	Common name and synonyms	Details not l	known			
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	 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. 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. 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. Oral: Do not induce emesis. Seek medical advice 				
4.2	Important symptoms & effects	Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident is recommended.				
	Immediate	Notes for th	ne doctor: No rele	evant information or antidote available		
4.3	medical attention	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.				
5.	Fire Fighting Measu	ires				
5.1	suitable extinguishing media	Carbon dioxide, extinguishing powder or water spray can be used for cooling of unaffected stock. In case of larger fires, water spray or alcohol resistant foam to be used.				
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 I					
6.1	Personal precautions, protective equipment and emergency procedures	Pers Ven sour Env prod	tilate area of spill ces. For personal p ironmental preca	Avoid contact with skin and eyes. Do not breathe in fumes. or leak, especially confined areas. Shut off/remove any ignition protection see Section 8. Autions: Do not allow to enter drains or water courses. When the public waters, inform appropriate authorities immediately in		
	procedures		ders: 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.		
6.2	Methods and material for containment and cleaning up	Sweep up with dustpan and brush off inert material. The waste should be held in suitable labeled container.		
6.3	Reference to other section	If appropriate section 8 and 13 shall be referred to		
7.	Handling and Stora	ge		
7.1		7.1.1. Recommendations shall be specified to:		
	Precautions for safe handling	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.		
	Surv manualing	7.1.2. Advice on general occupational hygiene:		
		(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		
	Canditions for	(a) How to manage risks associated with storage:		
	Conditions for safe storage,	No special storage condition indicated		
7.2	including any	(b) Other advice including: Do not contaminate water, food, or feed by storage or disposal.		
	incompatibilities	Store in cool place. Keep container tightly closed in a dry and well-ventilated place.		
8.	Evnoguna Controls	(c) Storage for 2 years Personal Protection		
0.	Exposure Controls /	Components with limit values that require monitoring at the workplace		
		108731-70-0 Not established		
8.1	Control parameters	1310-73-2		
0.1		PEL : Long term value – 2 mg/m3 TLV : Ceiling limit value – 2 mg/m3		
		2634-33-5 No exposure limit value known		
8.2	Exposure controls			
8.2.1	Appropriate engineering controls	The description of appropriate exposure control measures shall relate to the identified use(s) of the substance or mixture as referred to in subsection 1.2. This information shall be sufficient to enable the employer to carry out an assessment of risk to the safety and health of workers arising from the presence of the substance.		
		(a) Eye / face protection: Wear appropriate protective eyeglasses, splash goggles or chemical safety goggles and face shield.		
		(b) Skin protection: Wear appropriate protective clothing like impervious lab coat, apron or		
		coveralls.		
8.2.2	Individual protection measures	(i) <u>Hand protection</u> : Use compatible chemical / solvent resistant protective gloves made of suitable materials like rubber, plastic, etc,		
		(ii) Other: Wear appropriate boots and other footwear.		
		(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.		

		(d) General protective and hygienic measures:			
		 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 & Chemica	l Properties			
		(a) Appearance: Liquid			
		(b) Odour: Characteristic			
		(c) Initial boiling point and boiling range: 531.4 °C at 760 mmHg (Active Ingredient)			
	Information on	(d) Flash point: Not applicable			
9.1	basic physical and	(e) Vapour pressure : Not known			
9.1	chemical	(f) Bulk Density: 1.115 g/cm3 (9.30 lb/gal) at 24 °C			
	properties	(g) pH value: 5.22 (1% solution)			
		(h) Solubility(ies): in water: miscible with water			
		(i) Explosive properties: None			
		(j) Flammability: Not flammable			
9.2	Other information	Solvent content - 63.74%			
10.	Stability and Reacti				
10.1	Reactivity	Not known			
10.2	Chemical stability	Stable at normal temperature and pressure			
	Possibility of				
10.3	hazardous reactions	No information known			
	Conditions to				
10.4	avoid	Avoid temperatures above 150°F and below 20° F. High temperature, sunlight, frost			
10.5	Incompatible materials	Strong oxidizing agents			
	Hazardous	In case of fire - Cl ₂ , NO _x . Thermal decomposition may produce toxic carbon and nitrogen oxides,			
10.6	decomposition	and hydrogen chloride.			
11	products Toxico-logical Infor				
11.	1 0xico-logical infor	(a) acute toxicity: Acute toxicity – nontoxic to oral, dermal and inhalation			
	Information on toxicological effects	(b) skin corrosion/irritation: corrosive to skin in category 1B			
		(c) serious eye damage/irritation: Strong irritant with the danger of severe eye injury			
11.1		(d) respiratory or skin sensitization: skin sensitizing in category 1			
		(e) Carcinogenicity: no known evidence (g) reproductive toxicity: no known evidence			
		(g) reproductive toxicity: no known evidence (h) STOT-single exposure: no known evidence			
		(i) STOT-snight exposure: no known evidence			
		CAS no. Toxicity details for ingredients			
		108731- Oral (LD50 Rat) : > 2000 mg/kg body weight			
		70-0 Dermal (LD50 Rat) : > 2000 mg/kg body weight Inhalation (LC50 Rat) : 5.48 mg/l air - 4 hours			
		Eye Contact: Corrosive (Rabbit)			
	Numerical measures of	Skin Contact: Slightly Irritating (Rabbit)			
		Skin Sensitization: Not a Sensitizer (Guinea Pig)			
11.2		Reproductive/Developmental Effects: Fomesafen Sodium Salt: Non-genotoxic			
11.2	toxicity (such as acute toxicity	in the in vitro and in vivo assays. Hepatic changes and a small effect on reproductive performance seen in a 3-generation rat study at the 1000 ppm dose			
	estimates)	level. (based on Fomesafen Technical).			
	,	Chronic/Subchronic Toxicity Studies: Fomesafen Sodium Salt: Liver effects			
		seen at 10 pm and 100 ppm in 90-day rat feeding studies and in 6-month dog			
		studies at 25 mg/kg/d. (based on Fornesafen Technical). No evidence of			
		neurotoxicity from subacute or longer-term studies in mammals. (based on Fomesafen Technical)			
		Carcinogenicity: Fomesafen Sodium Salt: Increased rates of malignant liver			

		2634-33-5 I	Acute toxicity: LD50 Oral (rat) = 2000 mg/kg Irritation effect – Causes severe burns to eyes, skin, and respiratory tract resulting in pulmonary edema and lung inflammation. Exposure causes permanent eye damage. If ingested, can cause severe burns to mouth, throat and stomach and may be fatal. Skin: After injury with NaOH the subcutaneous tissue pH had not recovered to the pre-experimental level by the 90th minute. When washing started within 1 minute of injury the tissue pH value did not exceed 8.00. Washing had no effect when the delay between injury and the start of washing was 10 and 30 minutes. Benzisothiazol-3(2H)-one (BIT) has been shown in animal studies with the mouse, rat and rabbit to be of low acute toxicity. In the solutions in which BIT is used, concentrations above 0.05 % are irritating to the skin; the allergenic effects begin at 0.05 % and have been confirmed in a series of case and patch test studies. In a teratogenicity study in rats, doses of BIT which were not toxic to the dams (10 and 40 mg/kg) were neither embryotoxic nor teratogenic. Neither in the Ames test, the micronucleus test, the mouse lymphoma test nor the UDS test was BIT mutagenic. Usable studies to determine whether BIT has carcinogenic activity have not been published to date.	
11.3	Chemical if, listed in NTP or IARC or by OSHA as Carcinogens		s not a listed carcinogen	
11.4	Additional information	Product shows following danger according to internally approved calculation methods for preparation Irritant Corrosive		
12.	Ecological Informat	tion		
12.1	Eco – Toxicity	CAS no. 108731-70-0 1310-73-2 2634-33-5	Aquatic toxicity values Fish 96-hr LC50 = 306.867 Daphnid 48-hr LC50 = 178.679 Green Algae 96-hr EC50 = 79.430 Fish 48-hr LC50 = 189 mg/L Daphnid 48-hr EC50 = 40.4 mg/L; minimum lethal concentration = 700 mg/L Fish 96-hr LC50 = 1658.613; LC50 = 233.056 Daphnid 48-hr LC50 = 811.665 Green Algae 96-hr EC50 = 200.011	
		CAS no.	Persistence and degradability	
12.2	Persistence and degradability	108731-70-0 1310-73-2 2634-33-5	Biowin1 (Linear Model Prediction): Does Not Biodegrade Fast Biowin2 (Non-Linear Model Prediction): Does Not Biodegrade Fast Biowin3 (Ultimate Biodegradation Timeframe): Recalcitrant Biowin4 (Primary Biodegradation Timeframe): Weeks-Months Biowin5 (MITI Linear Model Prediction): Does Not Biodegrade Fast Biowin6 (MITI Non-Linear Model Prediction): Does Not Biodegrade Fast Biowin7 (Anaerobic Model Prediction): Does Not Biodegrade Fast Ready Biodegradability Prediction: NO Not justified for inorganic chemicals Biowin1 (Linear Model Prediction): Biodegrades Fast Biowin2 (Non-Linear Model Prediction): Biodegrades Fast Biowin3 (Ultimate Biodegradation Timeframe): Weeks Biowin4 (Primary Biodegradation Timeframe): Days-Weeks Biowin5 (MITI Linear Model Prediction): Does Not Biodegrade Fast Biowin6 (MITI Non-Linear Model Prediction): Does Not Biodegrade Fast	

		CAS no.	BCF	
12.3	Bio accumulative potential	1310-73-2 2634-33-5	Equation Used to Make BCF estimate: Log BCF = 0.6598 log Kow - 0.333 + Correction Correction(s): Value No Applicable Correction Factors Estimated Log BCF = 1.580 (BCF = 38.06 L/kg wet-wt) Not Bioaccumulative Not justified for inorganic chemicals Equation Used to Make BCF estimate: Log BCF = 0.50 Correction(s): Value Correction Factors Not Used for Log Kow < 1 Estimated Log BCF = 0.500 (BCF = 3.162 L/kg wet-wt) Not Bioaccumulative	
		CAS no.	Soil mobility	
12.4	Mobility in soil	108731-70-0	Estimated Koc: 189.3 L/kg Log Kow : 2.07 (Kowwin program) Soil Koc : 1.55e+003 (KOCWIN MCI method) Estimated Koc: 11.22 L/kg Log Kow : 0.64 (Kowwin program) Soil Koc : 34.5 (KOCWIN MCI method)	
12.5	General information	Water hazard class: 2 (self-assessment) – hazardous to water Do not allow the product to reach through ground water, water course or sewage system. Danger to drinking water if even small quantity leaks into the ground system. The mixture is not persistent, bio accumulative or toxic (Not PBT)		
13.	Disposal Considerat	ions		
13.1	Waste treatment methods	 (a) Waste treatment containers and methods: Waste treatment containers and methods shall be specified including the appropriate methods of waste treatment of both the substance or mixture and any contaminated packaging (for example, incineration, recycling, land filling) (b) Physical/chemical properties: Physical/chemical properties that may affect waste treatment options shall be specified (c) Sewage disposal: Sewage disposal shall be discouraged (d) Special precautions: Where appropriate, any special precautions for any recommended waste 		
		treatment option shall be identified.		
13.2	Additional information:	Any relevant Community provisions relating to waste shall be referred to. In their absence any relevant national or regional provisions in force shall be referred to.		
14.	Transport Informat	ion		
	Information includes RID, ADR, AND, ICAO, DOT, IMDG, IATA-DGR	14.1. UN number: Not Applicable 14.2. UN proper shipping name: Not Applicable 14.3. Transport hazard class(es): Not Applicable 14.4. Packing group: Not Applicable 14.5. Environmental hazards (e.g., Marine pollutant (Yes/No)): No 14.6. Special precautions for user: Not Applicable 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code: Not applicable 14.8. Additional information: Not Applicable		
15.	Regulatory Informa			
15.1	Safety, health and environmental regulations/other legislations	 Product related hazard information: The product has been classified and marked in accordance with directives on hazardous materials Hazard statements: CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE. DUE TO CORROSIVE NATURE, MAY BE HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. Signal word – DANGER Precautionary statements: 		

		✓ Do not get in eyes, on skin or on clothing.
		✓ Avoid breathing vapors or spray mist.
		Other regulations: Listed /not listed within the following regulation
		✓ Sara - section 355 (extremely hazardous substance): none of the ingredients are
		listed.
		Sara – section 313 (specific toxic chemical listing): Fomesafen Sodium Salt
		✓ TSCA: All 3 listed (CAS No.: 1310-73-2; 2634-33-5; 7732-18-5) ✓ Proposition 65 (chemical known to cause cancer): none of the ingredients are
		✓ Proposition 65 (chemical known to cause cancer): none of the ingredients are listed
		✓ Proposition 65 (chemical known to cause reproductive toxicity for females/
		males): none of the ingredients are listed
		✓ Carcinogenic categories (EPA) : none of the ingredients are listed
		✓ TLV : ACGIH – 1000 ppm
		✓ NIOSH – Ca (National Institute of Occupational Health and Safety): none of the
		ingredients are listed
16.	Other Information	
		Section 1: Identification of the substance/mixture and of the company/undertaking
		Section 2: Hazard Identification - Changes in Classification and Labelling.
		Section 3: Composition /Information on Ingredients
		Section 5: Fire-fighting measures Section 6: Accidental Release measures
		Section 7: Handling and storage.
16.1	Indication of	Section 7: Handling and storage. Section 8: Exposure Controls/Personal protection.
1011	changes	Section 9: Physical and Chemical properties.
		Section 10: Stability and Reactivity.
		Section 11: Toxicological Information.
		Section 12: Ecological Information.
		Section 14: Transport labeling
		Section 15: Regulatory Information
		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 TYPE NIOSH: National Institute for Occupational Safety and Health
		TLV: Threshold Limit Value
		MARPOL: Marine pollution IDGG 1. Let a serious local a factor of the Great and Factor of Ships are a factor of the Great and Factor of the Gre
	Abbreviations and acronyms	IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
		IARC: International Agency for Research on Cancer
16.2		NTP: National Toxicology Program
		CAS: Chemical Abstracts Service (division of the American Chemical Society)
		LC50: Lethal concentration, 50 percent
		LD50: Lethal dose, 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"
		Sara : Superfund Amendments and Reauthorization Act
		WEEL: Workplace Environmental Exposure Level
		EPI Suite calculation
		PBT profiler
		 http://www.chemicalbook.com/ChemicalProductProperty_EN_CB8854894.htm
	Key literature references and sources for data	 http://www.fluoridealert.org/wp-content/pesticides/msla/fomesafen.sodium.html
16.3		• http://www.chemnet.com/dict/dict108731-70-0en.html
		 http://www.syngentacropprotection.com/pdf/msds/03_63018132007.pdf
		http://www.lookchem.com/Fomesafen-sodium/
		http://www.fda.gov/downloads/Food/FoodIngredientsPackaging/EnvironmentalDecision ### April 2017 2027 2021 15
		s/UCM287533.pdf

	•	http://onlinelibrary.wiley.com/doi/10.1002/3527600418.mb263433kske0002/pdf
	•	http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/cl-
		inventory/search-clinventory-by-exact-
		name?_clinventory_WAR_clinventoryportlet_substanceName=1%2C2-benzisothiazol-
		3%282H%29-one&_clinventory_WAR_clinventoryportlet_otherIdentifier=220-120-9
	•	http://www.epa.gov/pesticides/reregistration/REDs/benzisothiazolin_red.pdf

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 USA LLC for further information.