

MATERIAL SAFETY DATA SHEET

SHAFEN Star

MSDS DATE: 12/16/2010

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SHAFEN Star

SYNONYMS:

EPA REGISTRATION NO.: 83529-25

MANUFACTURER: Sharda USA LLC
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 Hockessin, DE 19707

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CHEMICAL NAME: Fomesafen Sodium Salt
 5-[2-chloro-4-(trifluoromethyl)phenoxy]-N-(methylsulfonyl)-2-nitrobenzamide, sodium salt

CHEMICAL FAMILY: Diphenyl ether

CHEMICAL FORMULA: C₁₅H₁₀ClF₃N₂O₆S

PRODUCT USE: Contact Broadleaf Herbicide

PREPARED BY: Sharda USA LLC

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

ACTIVE INGREDIENT: Fomesafen Sodium Salt

<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
108731-70-0	22.1	22.1	no
	<u>ppm</u>	<u>mg/m3</u>	
OSHA PEL-TWA:	N/A	2 (based on Fomesafen Technical)	
OSHA PEL STEL :	N/A	N/A	
OSHA PEL CEILING:	N/A	N/A	
ACGIH TLV-TWA:	N/A	N/A	
ACGIH TLV STEL:	N/A	N/A	
ACGIH TLV CEILING:	N/A	N/A	

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes skin irritation. Harmful if swallowed. Causes moderate eye irritation. Do not get on skin or on clothing. Avoid contact with eyes. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

ROUTES OF ENTRY: Ingestion, inhalation, eye, and dermal contact.

POTENTIAL HEALTH EFFECTS

EYES: Moderately toxic

SKIN: Slightly toxic

INGESTION: Slightly toxic

INHALATION: Practically non-toxic

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CARCINOGENICITY – None known.

SECTION 4: FIRST AID MEASURES

FIRST AID	
If on skin or clothing	<ul style="list-style-type: none"> • 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.
If swallowed	<ul style="list-style-type: none"> • Call a Poison Control Center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a Poison Control Center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a Poison Control Center or doctor for treatment advice.
NOTE TO PHYSICIAN	
Probable mucosal damage may contraindicate the use of gastric lavage.	
Have the product container or label with you when calling a Poison Control Center or doctor or going for treatment.	
HOT LINE NUMBER For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call 1-800-888-8372	

SECTION 5: FIRE-FIGHTING MEASURES

This product is non-flammable and non-explosive.

FLAMMABLE LIMITS IN AIR, UPPER: Not applicable
 (% BY VOLUME) **LOWER:** Not applicable

FLASH POINT: >212 deg F

AUTOIGNITION TEMPERATURE: Not applicable

FLAMMABILITY: Not applicable

EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate personnel to safe area. Keep personnel removed and upwind of fire. Wear full protective clothing and self-contained breathing apparatus. If water spray is used to fight fire, dike and collect runoff. Prevent the use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce irritating and possibly toxic gases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: 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. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

SECTION 6 NOTES:

Small Spill: Absorb small spills with sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal. Scrub area with hard water detergent. Pick up wash liquid with additional absorbent and place into appropriate container for disposal.

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.

SECTION 7: HANDLING AND STORAGE

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HANDLING AND STORAGE: Store the material in a well ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco product 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 after handling.

OTHER PRECAUTIONS: Do not contaminate water, food, or feed by storage or disposal.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Refer to product label.

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.

EYE PROTECTION: 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.

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 handling.

SKIN PROTECTION: Long-sleeved shirt, long pants, shoes plus socks. Chemical resistant footwear and overalls. Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride (PVC), or Viton. 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.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

WORK HYGIENIC PRACTICES: 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.

EXPOSURE GUIDELINES: Refer to Section 2.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Light yellow

ODOR: Mild surfactant odor

PHYSICAL STATE: Liquid

pH AS SUPPLIED: 6.20

SPECIFIC GRAVITY (H₂O = 1): 1.110 g/ml @ 24 C

SECTION 10: STABILITY AND REACTIVITY

STABLE
X

UNSTABLE

STABILITY: Stable at normal temperature and pressure.

CONDITIONS TO AVOID (STABILITY): None known.

INCOMPATIBILITY (MATERIAL TO AVOID): None

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HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Thermal decomposition can lead to the release of toxic gases.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (Based on results from similar product):

Oral LD₅₀ (rabbit) >3863 mg/Kg

Dermal LD₅₀ (rabbit) >2,000 mg/Kg

Inhalation LC₅₀ (rat) 2.1 mg/L air (4-hr)

Eye Contact: Mildly Irritating (Rabbit)

Skin Contact: Slightly Irritating (Rabbit)

Skin Sensitization: Moderate Sensitizer (Guinea Pig)

Reproductive/Developmental Effects:

Non-genotoxic in in-vitro and in-vivo assays.

Development toxicity : Hepatic changes and a small effect on reproductive performance observed in a 3-generation rat study at the 1,000 ppm dose level (based on Fomesafen Technical).

Chronic/subchronic toxicity studies

Liver effects seen at 10 pm and 100 ppm in 90-day rat feeding study and in a 6-month dog study at 25 mg/kg/d. (based on Fomesafen Technical).

Carcinogenicity

Increased rates of malignant liver tumors in a 2-year mouse feeding study (1,000 ppm), but the results are not considered to be relevant to man (based on Fomesafen Technical).

Other toxicity information

None

Toxicity of other components

Not applicable

Target organs

Active ingredient (fomesafen)

Liver (based on Fomesafen Technical)

Inert ingredient

Not applicable

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Summary of effects:

This material is toxic to fish.

Eco Acute Toxicity:

Aquatic Toxicity (Based on Fomesafen Technical):

96 hour LC50 – Rainbow trout: 680 mg/L

48 hour LC50 – Daphnia magna: 294 mg/L

Avian Toxicity (Based on Fomesafen Technical):

Acute Dietary LC50 – Mallard Duck: > 5,000 ppm

Eco Chronic Toxicity:

Not available

Environmental fate:

Persistent in soil. Stable in water. Highly mobile in soil. Will leach. Sinks in water after 24 hours.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: 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.

Container disposal – Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

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.

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SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION – Non Regulated

WATER TRANSPORTATION-Herbicides , N.O.I.; NMC Class 60

AIR TRANSPORTATION – Herbicides , N.O.I.; NMC Class 60

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): The ingredients of this product are listed on the TSCA inventory or are exempt.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):
SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

302: Report product spills >4,800 gal.

311/312 HAZARD CATEGORIES: Acute Health Hazard

313 REPORTABLE INGREDIENTS: Fomesafen Sodium Salt (22.8%) (CAS No. 108731-70-0)

CA PROPOSITION 65: None

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

HAZARD RATINGS	NFPA/HMIS		
HEALTH:	3	0	MINIMAL
FLAMMABILITY:	1	1	SLIGHT
REACTIVITY:	0	2	MODERATE
		3	HIGH
		4	SEVERE

PREPARATION INFORMATION: MSDS DATE 12/16/2010
REVISION DATE

DISCLAIMER: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied is made. Consult Sharda USA LLC for further information.