

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**COMPANY ADDRESS:** ALBAUGH, LLC  
Ankeny, IA 50021

**EMERGENCY TELEPHONE NUMBERS:**  
(800) 424-9300 (CHEMTREC, transportation and spills)

**PRODUCT NAME:** BATTLE STAR

**CHEMICAL NAME:** Fomesafen

**PRODUCT USE:** Herbicide

**PRODUCT CODE:** EPA Reg. No 42750-229

**SECTION 2 - HAZARDS IDENTIFICATION SUMMARY**

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

Amber clear viscous liquid

**HEALTH HAZARDS:** DANGER. Corrosive eye irritant. Harmful if swallowed or absorbed through skin. May cause allergic skin reaction.

**PHYSICAL HAZARDS:** May release toxic fumes if burned.

**ENVIRONMENTAL HAZARDS:** May be phytotoxic to non-target terrestrial plant species.

**SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS**

COMPONENT	PERCENTAGE	CAS NUMBER
Sodium salt of Fomesafen	22.1%	108731-70-0
Inert Ingredients	77.9%	N/A

**SECTION 4 - FIRST AID MEASURES**

First Aid responders should use protective equipment in Section 8 if there is a potential for exposure to product.

**IF IN EYES:** 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 eye. Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** 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 do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**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.

**IF INHALED:** Move person to fresh air, if person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

**SECTION 5 - FIRE FIGHTING MEASURES**

National Fire Protection Rating (NFPA)

HEALTH	3
FLAMMABILITY	0
REACTIVITY	1
4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**FLASHPOINT:** >100°C

**EXTINGUISHING MEDIA:** Water spray, Foam.

**FIRE AND EXPLOSION HAZARD:** Thermal decomposition can release toxic gasses including hydrogen chloride, oxides of nitrogen and carbon.

**FIRE FIGHTING INSTRUCTIONS:** Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

**FIRE FIGHTING EQUIPMENT:** Self-contained breathing apparatus with full facepiece and protective clothing.

Minimize use of water to prevent environmental contamination. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**SMALL SPILL:** Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in 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. Minimize use of water to prevent environmental contamination

**SECTION 7 - HANDLING AND STORAGE**

KEEP OUT OF REACH OF CHILDREN!

**HANDLING:** Use only in a well-ventilated area. Do not reuse this container. Wear proper safety equipment specified in Section 8 when mixing, loading or otherwise handling concentrate.

**STORAGE:** Store above 32°F in original containers only. If product solidifies, return to room temperature and agitate to reconstitute. Keep container closed when not in use. Do not store near food or feed

**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION****EXPOSURE LIMITS (8 hour TWA, ppm):**

COMPONENT	OSHA PEL	ACIGH TLV
Sodium salt of Fomesafen	Not listed	Not listed

**ENGINEERING CONTROLS:** Proper ventilation is required when handling or using this product to minimize exposure to airborne contaminants. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**PERSONAL PROTECTIVE EQUIPMENT:**

**EYE PROTECTION** - Safety goggles, face shield or full face respirator if vapors cause eye discomfort.  
**CLOTHING** – Coveralls over short-sleeved shirt and short pants Chemical-resistant footwear plus socks.  
**GLOVES** – Chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber, or Viton.  
**RESPIRATOR** - In addition, for aerial applications, mixers and loaders handling more than 150 gallons of product in any single workday must wear a dust/mist filtering NIOSH-approved respirator with any N, R, P, or HE filter.

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.

**USER SAFETY RECOMMENDATIONS:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Amber clear viscous liquid
<b>Odor:</b>	Pungent
<b>pH:</b>	6.0 – 7.0
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	>100°C
<b>Evaporation Rate:</b>	No data
<b>Flammability:</b>	No data
<b>Flammability Limits:</b>	No data
<b>Vapor Pressure:</b>	<4 x 10 <sup>-3</sup> mPa (20°C) (Fomesafen)
<b>Vapor Density:</b>	Not applicable
<b>Density:</b>	1.12 – 1.16 g/ml (9.35 – 9.68 lb/gl)*
<b>Solubility:</b>	Emulsifies
<b>Partition Coefficient:</b>	log Pow = 3.4 (pH 4) (Fomesafen)
<b>Auto-Ignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	267.9 cSt (20°C); 83.9 cSt (40°C)

\*Listed density is an approximate value and does not necessarily represent that of a specific batch.

**SECTION 10 - STABILITY AND REACTIVITY**

**PRODUCT REACTIVITY:** None known.

**CHEMICAL STABILITY:** Stable under normal conditions.

**HAZARDOUS REACTION/POLYMERIZATION:** Will not occur

**CONDITIONS TO AVOID:** Oxidizing agents and acids, excessive heat.

**INCOMPATIBLE MATERIALS:** Oxidizers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition may release toxic gases such as HCl

**SECTION 11 - TOXICOLOGICAL INFORMATION**

Some acute tox values are from similar but not identical formulas.

**ACUTE TOXICITY:**

Oral LD <sub>50</sub> (rat)	> 3,000 mg/Kg
Dermal LD <sub>50</sub> (rat)	> 2,000 mg/Kg
Inhalation LC <sub>50</sub> (rat)	> 2.1 mg/L
Eye Irritation (rabbit)	Severe irritant
Skin Irritation (rabbit)	Slight irritant
Sensitization (guinea pig)	Potential sensitizer

**CARCINOGEN STATUS:**

OSHA	- Not listed
NTP	- Not listed
IARC	- Not listed

**TERATOGENICITY:** Limited evidence of reproductive effects or birth defects.

**MUTAGENICITY:** Not known to be mutagenic.

**SECTION 12 - ECOLOGICAL INFORMATION**

**ENVIRONMENTAL SUMMARY:** Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions favor drift from target area. This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**FATE:** Fomesafen is moderately persistent with a soil half-life of 100 - 365 days depending on soil type and moisture levels. It is highly mobile in soil with a risk of groundwater contamination.

**FISH TOXICITY:** (fomesafen)

96 hour LC<sub>50</sub>, Rainbow trout - 680 ppm  
96 hour LC<sub>50</sub>, Bluegill - 1,500 ppm

**AVIAN TOXICITY:** (fomesafen)

5-day Dietary LC<sub>50</sub>, Bobwhite quail - > 5,000 mg/Kg  
5-day Dietary LC<sub>50</sub>, Mallard duck – > 5,000 mg/Kg

**BEE TOXICITY:** (Fomesafen) > 100 ug/bee

**SECTION 13 - DISPOSAL CONSIDERATIONS**

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

**WASTE:** Pesticide wastes are toxic. Dispose of in accordance with applicable Federal, state and local laws and regulations at an approved facility.

**CONTAINER:** Do not reuse container. Triple rinse (or equivalent). Then offer for recycling, reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**SECTION 14 - TRANSPORT INFORMATION**

**SHIPPING DESCRIPTION:** Not regulated by DOT  
(Ground transport)

**TRANSPORT HAZARD CLASS:** N/A  
**UN NUMBER:** N/A  
**DOT PACKING GROUP:** PG III

**SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:** None

**SARA TITLE III STATUS:**  
311/312 Hazard Categories – Immediate, Chronic Health  
313 Toxic Chemicals – Fomesafen salt

**CALIFORNIA PROP 65:** Not listed

**TSCA:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SECTION 16 - OTHER INFORMATION**

HMIS HAZARD RATINGS	HEALTH	3
	FLAMMABILITY	0
	PHYSICAL HAZARD	1
	4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**DISCLAIMER:** The information presented herein is based on available data from reliable sources and is correct to the best of Albaugh's knowledge. Albaugh makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling.

It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

**REVISED DATE:** October, 2014

**REFERENCE:** Revised for GHS compliance