



FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

- 1.1 PRODUCT IDENTIFIER:**
TRADE NAME: Nufarm Leopard™ Herbicide
EPA Reg. No. 71368-119
- 1.2 RECOMMENDED USE:** GROUP 10 HERBICIDE FOR POST EMERGENCE BROADCAST USE ON LISTED CROPS
- 1.3 COMPANY NAME:**
 Nufarm Americas, Inc.
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-3453330
- 1.4 24 Hour Emergency Phone CHEMTREC:** 1-800-424-9300 - **Medical Emergencies:** 1-877-325-1840

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to 29 CFR 1910.1200

Eye Damage/Irritation	Category 2B	H320
STOT-SE STOT-RE	Category 2	H371
	Category 2	H373

2.2 Label elements



Signal word: **WARNING**
 Hazard Statement: H320 – Causes eye irritation.
 H371 – May cause damage to organs.
 H373 – May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement: (Prevention): P264 – Wash hands and face thoroughly after handling.
 P280 – Wear protective gloves/protective clothing/eye protection/face protection.
 P260 – Do not breathe dust/fume/gas/mist/vapors/spray.
 P270 – Do not eat, drink or smoke when using this product.

Precautionary Statement: (Response): P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 – If eye irritation persists: Get medical advice/attention.
 P308+P311 – If exposed or concerned: Call a POISON CENTER or doctor/physician/
 P314 – Get medical advice/attention if you feel unwell.

Precautionary Statement: (Storage): P405 – Store locked up.

Precautionary Statement: (Disposal): P501 – Dispose of contents/container in accordance with local, state, regional and national regulations.

2.3 Other hazards not otherwise classified
 None known.



3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Classification	Concentration [%]
Glufosinate-ammonium	77182-82-2	Eye dam/irrit 2B; H320	24.50
Proprietary blend of surfactants	Mixture	STOT-SE, 2; H371; STOT-RE, 2; H373	51.00
*Other ingredients	Trade Secret		24.50

*Ingredients not specifically listed are non-hazardous or are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Skin contact:

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.

Ingestion:

Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor for treatment advice.

Eye contact:

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.

Inhalation:

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.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Causes eye irritation.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-877-325-1840

Take container, label or product name with you when seeking medical attention.

NOTE TO PHYSICIAN: If ingested, endotracheal intubation and gastric lavage should be performed as soon as possible followed by charcoal and sodium sulfate administration.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Dry chemical, carbon dioxide (CO₂), alcohol foam, foam, water spray or fog. Do not use water jet as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: During a fire, oxides of carbon, hydrocarbons, and phosphorus can be released.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: 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 or rinsate.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.
Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Refer to product labeling for additional information. Avoid inhalation of mists, vapors / spray and contact with eyes, skin and clothing. Do not breathe mists or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Do not use or store near heat or open flame. Keep the container tightly closed and dry in a cool, well-ventilated place. Storage temperatures should not exceed 125°F. If bulk product is stored below 32°F, the material **should not be pumped until its temperature exceeds 32°F. Protect against direct sunlight.** Do not contaminate water, food, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:**OCCUPATIONAL EXPOSURE LIMITS****U.S. Workplace Exposure Level (ACGIH) TLVs**

Components	Type	Value
No listings	TWA	

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
No listings	TWA	

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:**Engineering Measures**

When handlers use closed systems in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticide [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.
Skin Protection: Coveralls worn over short-sleeved shirt and short pants. Chemical-resistant gloves: barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, polyvinyl chloride (PVC) \geq 14 mils, or Viton® \geq 14 mils. Chemical resistant footwear plus socks. Wear a chemical resistant apron when mixing/loading and cleaning equipment.
Respiratory Protection: Mixers/loaders supporting aerial applications must wear a dust/mist filtering respiratory (MSHS/NIOSH approval number TC-21C), or a NIOSH approved respirator with any N, R, P, or HE filter. If respirators are used, a program



should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE :	Liquid, clear viscous
ODOR:	Slight ammonia-like.
ODOR THRESHOLD:	No data available.
COLOR:	Red.
pH:	6.77 (1% w/w).
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available.
FLASH POINT:	>212°F / >100°C.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	No data available.
SOLUBILITY:	Emulsifies
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available
VISCOSITY: (kinematic):	208 centistokes @ 20°C / 68°F 76.6 centistokes @ 40°C / 104°F
SPECIFIC GRAVITY (Water = 1):	1.15 g/ml
DENSITY:	9.62 lbs/gal / 1.15 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature and use conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available. Will not polymerize.

10.4 CONDITIONS TO AVOID

Exposure to elevated temperatures can cause product decomposition.

10.5 INCOMPATIBLE MATERIALS

Avoid contact with mild steel.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Oxides of carbon, oxides of nitrogen and hydrogen chloride may form in a fire situation.

11. TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

Inhalation. Ingestion. May include dermal or eye contact.

LC₅₀ (rat): >2.13 mg/L (4 HR)

LD₅₀ Oral (rat): > 1750 mg/kg

LD₅₀ Dermal (rat): > 2000 mg/kg - < 5000 mg/kg

Acute Toxicity Estimates: No data available

Skin Irritation (rabbit): May cause slight irritation.

Eye Irritation (rabbit): Causes moderate eye irritation.

Specific Target Organ Toxicity: Single Exposure: Central Nervous System, Kidney.
Repeat Exposure: Kidney.

Aspiration: No data available

Skin Sensitization (guinea pig): Not a sensitizer

Carcinogenicity: No data available

Reproductive Toxicity: No data available for end-use product

Germ Cell Mutagenicity: No data available

Interactive Effects: None known



12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

Do not apply directly to water or to areas where surface water is present, except as allowed by Use Directions for rice on the product label. Do not apply to intertidal areas below the mean high water mark. Do not contaminate water by cleaning equipment or disposal of equipment washwaters or rinsate.

Ecotoxicological Data

	Species	Test Results
Glufosinate-ammonium	Rainbow Trout	> 320 mg/l – 96-hour LC ₅₀
	Daphnia Magna	668 mg/l – 46-hour EC ₅₀
	Apis mellifera	354µ/bee – 48-hour LD ₅₀
	Bobwhite Quail	> 2000 mg/l – LD ₅₀
	Mallard Duck	> 2000 mg/l – LD ₅₀

Drift or runoff may adversely affect non-target plants.
 Do not apply directly to water.
 Do not contaminate water when disposing of equipment wash water.
 Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: No data available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

12.4 MOBILITY IN SOIL

No data available.

No data available.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org/>. Do not contaminate water, food or feed by storage or disposal.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED BY DOT

U.S. Surface Freight Classification: COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS: 60)

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS**NFPA & HMIS Hazard Ratings:****NFPA**

2 Health	0 Least
1 Flammability	1 Slight
1 Instability	2 Moderate
	3 High
	4 Severe

HMIS

2 Health
1 Flammability
1 Reactivity
C PPE

SARA Hazard Notification/Reporting**SARA Title III Hazard Category:**

Immediate	<u>Y</u>
Delayed	<u>Y</u>

Fire	<u>N</u>
Reactive	<u>N</u>

Sudden Release of Pressure	<u>N</u>
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Reportable Quantity (RQ) under U.S. CERCLA: Not listed.
SARA, Title III, Section 313: Not listed.
RCRA Waste Code: Not listed.
CA Proposition 65: Not applicable

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if absorbed through skin.
Harmful if swallowed.
Causes moderate eye irritation.
Avoid contact with skin, eyes or clothing.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco or using the toilet.
Wear long sleeved shirt and long pants, socks, shoes, and gloves.
Remove and wash contaminated clothing before reuse.
Wear protective eyewear (if appropriate).

16 OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED 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-accepted label.

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