1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Imazapic 2SL IVM Herbicide**
EPA Reg. No.: 71368-118
Product Type: Herbicide

Company Name: Nufarm Americas, Inc.
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300**
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

For EPA FIFRA-Specific Information see Section 15

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Classification of the product:

No need for classification according to GHS criteria for this product.

Label elements:

The product does not require a hazard warning label in accordance with GHS criteria.

Hazards not otherwise classified:

Labeling of special preparations (GHS):
The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 - 7 % dermal
The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % oral
The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 - 7 % Inhalation - vapour
The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 - 7 % Inhalation - mist

According to Regulation 1994 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Emergency overview:

CAUTION:
KEEP OUT OF REACH OF CHILDREN.

KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Avoid inhalation of mists/vapours.
Avoid contact with the skin, eyes and clothing. Wash thoroughly after handling.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Imazapic, ammonium salt	104098-49-9	23.6%
Proprietary Ingredients	Proprietary Ingredients	76.4%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

General Advice:
First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.
If Inhaled: Remove the affected individual into fresh air and keep the person calm.Assist in breathing if necessary.
If on Skin: Rinse immediately with plenty of water for 15-20 minutes..
If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 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: 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. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.
Most Important symptoms/effects, acute and delayed: No significant reaction of the human body to the product known.
Indication of Immediate medical attention and special treatment if needed, if necessary: No known specific antidote. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.
Special Fire Fighting Procedures: Hazards during fire-fighting: carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons, If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.
Advice for fire-fighters: Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.
Further information: Evacuate area of all unnecessary personnel. Contain contaminated ater/firefighting water. Do not allow to enter drains or waterways.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions.Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.
Environmental Precautions: Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods for Containment: Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

HANDLING: RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS .PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible.
Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied.The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:
The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge.
Electrostatic discharge may cause ignition.

STORAGE: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials. Further information on storage conditions: Keep only in the original container in a cool, dry,well- ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.
Advice on system design: Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.
Personal protective equipment: RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS: Respiratory protection: Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.
Hand protection: Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.
Eye protection: Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.
Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures: Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash.Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be
decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid
Odor:	odorless
Odor threshold:	Not applicable
pH:	6.4 - 7
Melting point/freezing point:	Approx. 0° C (information applies to the solvent)
Initial boiling point and boiling range	Approx 100° C (1,013 hPa) Information applies to the solvent.
Flash point:	Non-flammable
Evaporation rate:	Not applicable
Flammability (solid, gas):	Not flammable
Upper/lower flammability or explosive limits:	Not applicable
Vapor pressure:	Approx. 23.4 hPa (approx. 20° C) information applies to the solvent
Vapor density:	Not applicable
Relative density:	1.07 – 1.09 g/cm^3 (20° C)
Solubility(ies):	Fully soluble
Decomposition temperature:	carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons Stable at ambient temperature . If product is heated above decomposition temperature toxic vapours may be released.
Viscosity:	>1 (20° C)

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No hazardous reactions if stored and handled as prescribed/indicated. Corrosion to metals: Corrosive effect on: zinc iron mild steel. Oxidizing properties: Not an oxidizer.
Chemical Stability: The product is stable if stored and handled as prescribed/indicated.
Possibility of Hazardous Reactions: The product is chemically stable.
Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.
Conditions to Avoid: Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.
Incompatible Materials: strong bases, strong acids, strong oxidizing agents
Hazardous Decomposition Products: Decomposition products: Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off. **Thermal decomposition: Possible thermal decomposition products:** carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons. Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

11. TOXICOLOGICAL INFORMATION

Primary Routes of Exposure: Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Toxicological Data:
Acute Toxicity: Assessment of acute toxicity: Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

Data from laboratory studies conducted are summarized below:
Oral: Rat LD_{50}: > 5,000 mg/kg
Dermal: Rat LD_{50}: >5,000 mg/kg
Inhalation: Rat 1-Hr LC_{50}: >9.52 mg/l Rat 4-hr LC_{50}: >2.06 mg/L
Eye Irritation: Rabbit: Non-irritating
Skin Irritation: Rabbit: Non-irritating
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Repeated dose toxicity
Assessment of repeated dose toxicity:The product has not been tested. The statement has been derived from the properties of the individual components . No substance-specific organtoxicity was observed after repeated administration to animals.

Genetic toxicity
Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information
Misuse can be harmful to health.

Symptoms of Exposure
No significant reaction of the human body to the product known. Medical conditions aggravated by overexposure
Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic invertebrates. Acutely harmful for aquatic plants. There is a high probability that the product is not acutely harmful to fish.

Toxicity to fish

Information on: Imazapic
LC50 (96 h) > 98.7 mg!/, Cyprinodon variegatus

Aquatic invertebrates

Information on: Imazapic
LCSO (48 h) > 97.7 mg/I, Mysidopsis bahia

Aquatic plants

Information on: Imazapic
EC50 (14 d) 0.0061 mg/I, Lemna gibba
No observed effect concentration (14 d) 0.00258 mg/I, Lemna gibba

Assessment of terrestrial toxicity
With high probability not acutely harmful to terrestrial organisms.

Other terrestrial non-mammals
Information on: imazapic LC50, Anas platyrhynchos
With high probability not acutely harmful to terrestrial organisms. LD50 > 100 uglbee, Apis mellifera
With high probability not acutely harmful to terrestrial organisms.

Mobility in soil

Assessment transport between environmental compartments
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Imazapic

The substance will not evaporate into the atmosphere from the water surface.
Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information
Other ecotoxicological advice:
The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. DISPOSAL CONSIDERATIONS

Waste disposal of substance:
Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:
Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:
This product is not regulated by RCRA.

14. TRANSPORTATION INFORMATION

DOT
Not classified as a dangerous good under transport regulations

IMDG

Hazard Class:	9
Packing Group:	III
ID Number:	UN 3082
Hazard label:	9, EHSM
Marine pollutant:	YES
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains IMZAPIC)

IATA/ICAO

Hazard Class:	9
Packing Group:	III
ID Number:	UN 3082
Hazard label:	9, EHSM
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains IMZAPIC)

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

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. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Avoiding breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling.

U.S. FEDERAL REGULATIONS

Registration status:

Crop Prptection: TSCA, US released/exempt
Chemical: TSCA, US blocked/not listed

EPCRA 311/312 (Hazard categories): Acute

State regulations
CA Prop 65:
There are no listed chemicals in this product.

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 2 **Flammability:** 1 **Reactivity:** 1
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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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Date of Issue: May 25, 2016 **Supersedes:** January 18, 2016