SAFETY DATA SHEET

Date: Nov /2016 Code: HS312

Company Identification ADAMA Andina B.V. Sucursal Colombia Calle 1C # 7-53 Interior Zona Franca Phone: (057)3851890 www.adama.com Barranquilla, Colombia

Emergency numbers

CISPROQUIM 2886012 Bogotá (Colombia) 01 8000 916 012 National Toll Free (Colombia) 24-hour care 365 days a year.

ADAMA

Shotgun Imazapir 240 gr. / L

1. Substance

Imazapyr Family: Imidazolinonas Use: herbicide



| 2. Hazards Identification | |
|--------------------------------------|---|
| Appearance: | Product Soluble concentrate, Bluish - greenish white with ammonia odor |
| Physical and chemical properties: | Not flammable Not explosive Not oxidizing |
| Human health hazards: | Keep out of the reach of children |
| Risks to the environment: | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

3. Composition / information on ingredients

| Chemical Name | CAS number | EC number | Content (% w / w) | Molecular Formula | synonym | Classification |
|--|---------------|--------------|----------------------|--------------------------|----------|----------------|
| 2-(4-isopropyl-4-methyl-5-oxo- 2-imidazolin-2-yl)nicotinic acid, isopropylammonium | 81510-83-0 | 617-240-2 | 240 gr./L | $C_{13}H_{15}N_{3}O_{3}$ | Imazapyr | R52/53 |

| 4. First Aid Measures | | |
|---|--|--|
| Inhalation: | Remove victim to fresh air. If breathing is difficult: artificial respiration. Get medical attention. | |
| Ingestion: | Wash out mouth with plenty of water. Never give anything by mouth to an unconscious person. Get medical attention. | |
| Skin contact: | Remove contaminated clothing and shoes. Wash away remainder with plenty of water. | |
| Eye contact: | Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Get medical attention. | |
| Note to physician: | No specific antidote known. Treat symptomatically and give supportive therapy. | |
| Protection of First Aid: | Wear suitable gloves and eye / face protection. See Section 8 | |
| 5. Fire Fighting Measur | es | |
| Suitable extinguishing media: | For small fire: dry chemical powder, water spray carbon dioxide For large fire: foam, water fog, water spray. | |
| Hazardous decomposition products: | n Nitrogen oxides (NO, NO2) , Carbon oxides (CO, CO2) . | |
| Protection against fire | Self-contained breathing apparatus and total protection required in enclosed areas. | |
| 6. Measures in case of Accidental Spill | | |
| Personal protection: | Observe all protection and safety precautions when cleaning up spills. Wear suitable | |

gloves and eye / face protection.

See Section 8

| Environmental precautions: | Do not empty into drains Do not discharge into the environment. |
|---|---|
| Measures in case of spillage: | Collect spills and put it into appropriated container. Dispose of this material and its container at hazardous or special waste collection point. |
| 7. Handling and Storage | |
| Handling Precautions: | Ventilation required. |
| Storage precautions: | Keep in original containers. Keep away from food, drink and animal feed stuffs. Store in dry, well-ventilated area. |
| Storage - away from | Direct sunlight. |
| Precautions in handling and storage: | Handle in accordance with good industrial hygiene and safety procedures. |
| 8. Exposure Control / Per | sonal Protection |
| Industrial hygiene: | Ventilation required. |
| Personal protective equipm Respiratory system: | No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. |
| Skin and body: | Wear suitable protective clothing Wear safety boots. |
| hands: | Wear suitable gloves. |
| eyes: | Chemical goggles or safety glasses. |
| TLV - ACGIH [mg/m ³]: | Imazapyr isopropylammounium: 0.5 |
| Working Procedures and Safety: | Wash hands thoroughly after handling. When using do not eat, drink or smoke. Wash clothing before re-using. |
| 9. Physical and chemical | properties |

| Form: Colour: Odor: pH: Melting point: Evaporation rate: Boiling point: Flashpoint: Evaporation rate: Inflammability: Vapor pressure: Relative density: Solubility: Partition coefficient n-octanol Ignition temperature: Decomposition temperature: Explosive properties: Oxidative properties: | l / water: | Soluble concentrate. Bluish - greenish Ammonia 6-8 Not available Not available Not available Not available Not flammable <0.013@ 60°C (Imazapyr) 1.060 Miscible 0.11 (Imazapyr) Not available Not available Not available Not available Not explosive Not oxidizing |
|---|-------------|---|
| 10. Stability and reactivity | | |
| Stability: | Stable unde | r normal conditions. |

Materials to avoid: oxidizing agents , acids , alkali .

 $\label{eq:Hazardous Decomposition:} \mbox{ nitrogen oxides (NO, NO2), carbon oxides (CO, CO2).}$



11. Toxicological information

| Acute toxicity | |
|------------------------------|---------------------------|
| Oral, Rat LD50 (mg/kg): | >2,000 |
| Dermal, Rat LD50 [mg/kg] | >2,000 |
| Inhalation, Rat LC50 | |
| [mg/l/4h] | >5.22 |
| Skin corrosion / irritation: | Not irritating |
| Serious eye damage / | |
| irritation: | Minimal irritant |
| Respiratory or skin | |
| sensitisation: | Non sensitizer |
| Germ cell mutagenicity: | (Imazapyr): Not mutagenic |
| Carcinogenicity: | Not classified |
| | Imazapyr: |
| Reproductive toxicity: | Not classified |
| STOT-single exposure: | Not available |
| STOT-repeated exposure: | Not available |
| Aspiration hazard: | Not available |

12. Ecological Information

| Common name Acute toxicity 96 H-LC50 - Rainbow trout [mg/l]: 48 H-EC50 - Daphnia magna [mg/l]: 120 H - EC50 Algae [mg/l]: Bees LD50 [µg]: LD50 - Japanese quail [mg/kg]: Long-term exposure: | Imazapyr >100 >100 71 Not toxic to bees >2,000 Not available |
|--|--|
| Persistence - degradability Soil: Water : | Moderately persistent in soil Half-life time (t1/2) Field: 25-142 days. Half-life time (t1/2) = 7 days |
| Bioaccumulative potential: | Low bioaccumulation potential (log Kow=0.11). |
| Mobility: Soil : | Low mobility Low risk of underground water contamination. |
| Results of PBT and vPvB assessment | Not available |
| Other adverse effects: | None known. |
| 13. Considerations Relatin | g to the Elimination |
| Waste management: | To avoid contamination all precautions for the use of this product should be taken into account, according to its registered use. If you cannot safely handle and dispose of waste safely. |
| Disposal methods: | After completely emptying the contents of this container, rinse placing clean water to occupy a quarter of that: plug it, shake it hard, then pour the solution to the spray tank while being filled, repeat this procedure three (3) times. Finally unusable by crushing or piercing the package to be delivered to the nearest dealer for further incineration in places authorized by the ANC. No package must be reused. |
| 14. Transport Information | |
| Not classified | |
| IMDG-Marine pollution | NO |



15. Regulatory Information

National regulations:

1. Law 769/202. National road traffic code. Article 32: Burden of a veiculo must be properly packaged, labeled, packed and filled in accordance with national technical regulations.

2. Decree 1609 of July 31, 2002, whereby the motor ground handling and transportation of dangerous goods by road is regulated.

3. Ministry of Transport. Resolution 3800 of December 11, 1998. By which is adocta design and unique mechanisms of calcification distribution of cargo manifest format are set.

4. Law 55 of 1993 from the presidency of the replublica through which the Convention No. 170 and Recommendation No. 177 on the safe use of chemicals at work is approved.

5. Decree 4741 of 2005. By which regulates parcialamente prevention and management of waste or hazardous waste generated within the framework of comprehensive management.

| Risk Phrases: | R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
|-----------------|---|
| Safety Phrases: | S57 Use appropriate containment to avoid environmental contamination. S60 This material and its container must be disposed of as hazardous waste. S29/35 Do not empty into drains; dispose of this material and its container in a safe way. S13 Keep away from food, drink and animal feedingstuffs. S46 If swallowed, seek medical advice immediately and show this container or label. S02 Keep out of the reach of children. |

16. Other informations

Material Safety Data Sheet Material according to 91/155 / CEB.93 / 112 / EEC (as amended) and OSHA, 29 CFR 1910.1200 (g). The information contained herein is considered accurate and reliable, based on the recommendations given by the good manufacturing practices and manipulation of these products entered in the available literature. But it is up to the user under his sole responsibility to decide whether this information is appropriate and useful.

This material should only be used by people who are aware of the safety standards required and to know the recommendations in this material safety data sheet for any further information contact the Emergency Phone: 2886012 CISPROQUIM Bogota (Colombia), Line 01 8000 916 012 national free (Colombia) 24-hour care los365 days a year.

ABREVIATURAS:

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

CAS: (Chemical Abstract Service) Entity that organizes information published in Chemical Abstracts by the American Chemical Society.

Chemical Society.

LC50: Lethal Concentration 50% EC50: Effective Concentration 50%

LD50: Lethal dose 50%

NFPA: National Fire Protection Association (USA)

STEL (Short Time Exposure Limited) Limit value of allowable concentration in a short time of exposure or maximum concentration for continuous exposure over a period of 15 minutes (with a maximum of four such periods per day, with at least 60 minutes between exposure periods provided that the daily value of TLV - TWA is not exceeded.

TWA (Time Weight Average) permissible average value, time weighted for a normal eight-hour work day or 40 hours per week

TLV (Threshold Limit Value) measures of toxicity established by the ACGIH.

NIOSH National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration)

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

UN: United Nations

KOW: Coefficient of n-octanol water partition

NTP: National Institute for Safety and Health at Work.

DOT: Department of Transportation

IMO: International Maritime Organization

IATA: International Air Transport Association

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