

Revision date : 2022/04/26 Version: 7.0

Page: 1/12 (30840187/SDS_CPA_US/EN)

1. Identification

Product identifier used on the label

Imazethapyr Herbicide Technical

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

<u>Company:</u> BASF CORPORATION 100 Park Avenue Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information CHEMTREC: 1-800-424-9300 BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number: Registration number: Molecular formula: Synonyms: 57507 EPA Registration number: 241-309 C15 H19 N3 O3 Imazethapyr

2. Hazards Identification

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

Classification of the product

Aquatic Acute	1
Aquatic Chronic	1
Combustible Dust	Combustible Dust (1)

Hazardous to the aquatic environment - acute Hazardous to the aquatic environment - chronic Combustible Dust

Revision date : 2022/04/26 Version: 7.0

Label elements

Signal Word: Warning Hazard Statement: May form combustible dust concentration in air. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. Precautionary Statements (Prevention): P273 Avoid release to the environment. Precautionary Statements (Response): P391 Collect spillage. Precautionary Statements (Disposal): Dispose of contents/container in accordance with local regulations. P501

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: 3 % dermal The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 3 % oral The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 3 % Inhalation - dust

3. Composition / Information on Ingredients

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

imazethapyr

CAS Number: 81335-77-5 Content (W/W): <= 97.0% Synonym: imazethapyr reference substance

4. First-Aid Measures

Description of first aid measures

General advice: Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air.

If on skin:

Wash thoroughly with soap and water

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

Revision date : 2022/04/26 Version: 7.0 Page: 3/12 (30840187/SDS_CPA_US/EN)

If swallowed:

Rinse mouth and then drink 200-300 ml of water.

Most important symptoms and effects, both acute and delayed

Symptoms: (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician Treatment:

Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting: carbon monoxide, carbon dioxide, nitrogen oxides The substances/groups of substances mentioned can be released in case of 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 water/firefighting water. Do not allow to enter drains or waterways. Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

Impact Sensitivity: Remarks:

Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Further accidental release measures:

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Avoid the formation and build-up of dust - danger of dust explosion. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

Personal precautions, protective equipment and emergency procedures

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.

Revision date : 2022/04/26 Version: 7.0

Page: 4/12 (30840187/SDS CPA US/EN)

Methods and material for containment and cleaning up

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

Precautions for safe 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. Avoid dust formation. 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. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (2013 Edition) for safe handling.

Dust explosion class: Dust explosion class 2 (Kst-value 200 up to 300 bar m s-1).

Conditions for safe storage, including any incompatibilities

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, wellventilated 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.

No substance specific occupational exposure limits known.

Revision date : 2022/04/26 Version: 7.0

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

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 stuffs.

9. Physical and Chemical Properties

Form:	solid, crystalline	
Odour:	pungent odour	
Odour threshold:	Not determined due to potential health h	azard by inhalation.
Colour:	off-white	
pH value:	approx. 2 - 3	(other)
	(approx. 25 °C)	
	(as a dispersion)	
Melting point:	177 - 179 °C	

Revision date : 2022/04/26 Version: 7.0		Page: 6/12 (30840187/SDS_CPA_US/EN)
Boiling point:	The substance / product decomposes therefore not determined.	
Flash point:	not applicable, the product is a solid	
Flammability:	not flammable	
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Vapour pressure:	0.013 mPa (25 °C)	
Bulk density:	25.0 - 28.7 lb/ft3	
Vapour density:	negligible	
Partitioning coefficient n-	1.49	
octanol/water (log Pow):	(25 °C)	
Self-ignition	> 200 °C	(other)
temperature:	No self ignition was observed up to the specified temperature.	. ,
Thermal decomposition:	210 °C, 40 kJ/kg (DSC (DIN 51007)) (onset temperature) Not a substance liable to self-decompo- transport regulations, class 4.1.	osition according to UN
Viscosity, dynamic: Solubility in water:	not applicable, the product is a solid 2.15 g/l (25 °C)	
Molar mass: Evaporation rate:	289.33 g/mol not applicable	

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties: not fire-propagating

Dust explosivity characteristics: Kst: approx. 217 m.bar/s

Dust explosion class: Dust explosion class 2 (Kst-value 200 up to 300 bar m s-1) (St 2)

Minimum ignition energy: 3 - 10 mJ

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Revision date : 2022/04/26 Version: 7.0 Page: 7/12 (30840187/SDS CPA US/EN)

No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage. This product may form an explosive mixture if: 1. the dust is suspended in the atmosphere as a dust cloud AND 2. the concentration of the dust is above the lower explosion limit (LEL) AND 3. the limiting oxygen concentration (LOC) is exceeded.

Incompatible materials

strong oxidizing agents

Hazardous decomposition products

Decomposition products: Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition: 210 °C (DSC (DIN 51007)) (onset temperature) Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

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.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Relatively nontoxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Oral

Type of value: LD50 Species: rat (male/female) Value: > 2,000 mg/kg (OECD Guideline 401) No mortality was observed.

Inhalation Type of value: LC50 Species: rat (male/female) Value: > 4.9 mg/l (OECD Guideline 403) Exposure time: 4 h An aerosol was tested. No mortality was observed.

Dermal Type of value: LD50 Species: rabbit (male/female) Value: > 2,000 mg/kg (OECD Guideline 402) No mortality was observed.

Revision date : 2022/04/26 Version: 7.0

Page: 8/12 (30840187/SDS_CPA_US/EN)

Assessment other acute effects

Assessment of STOT single: Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

Assessment of irritating effects: May cause moderate but temporary irritation to the eyes. May cause slight irritation to the skin.

<u>Skin</u> Species: rabbit Result: non-irritant Method: OECD Guideline 404

<u>Eye</u> Species: rabbit Result: non-irritant Method: OECD Guideline 405

<u>Sensitization</u> Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Buehler test Species: guinea pig Result: Non-sensitizing. Method: OECD Guideline 406

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organtoxicity was observed after repeated administration to animals.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with microorganisms and mammalian cell culture.

Carcinogenicity

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

<u>Reproductive toxicity</u> Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect.

<u>Teratogenicity</u> Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Other Information Misuse can be harmful to health.

12. Ecological Information

Toxicity

Revision date : 2022/04/26 Version: 7.0

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

Very toxic to aquatic life with long lasting effects.

Toxicity to fish

LC50 (96 h) 340 mg/l, Oncorhynchus mykiss (OPP 72-1 (EPA-Guideline), static)

LC50 (96 h) 240 mg/l, Ictalurus punctatus, syn: I. robustus

<u>Aquatic plants</u> EC50 (14 d) 0.0101 mg/l, Lemna gibba

No observed effect concentration 0.00438 mg/l, Lemna gibba

EC50 (96 h) 71 mg/l, Selenastrum capricornutum

No observed effect concentration (96 h) 50 mg/l, Selenastrum capricornutum

Toxicity to fish

Information on: imazethapyr LC50 (96 h) 340 mg/l, Oncorhynchus mykiss (OPP 72-1 (EPA-Guideline), static)

Aquatic invertebrates

Information on: imazethapyr LC50 (48 h) > 1,000 mg/l, Daphnia magna

<u>Assessment of terrestrial toxicity</u> With high probability not acutely harmful to terrestrial organisms. With high probability not acutely harmful to honeybees.

Other terrestrial non-mammals

Information on: imazethapyr LD50 > 100 ug/bee, Apis mellifera

Persistence and degradability

Assessment biodegradation and elimination (H2O) Not readily biodegradable (by OECD criteria).

Elimination information

Not readily biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential

Revision date : 2022/04/26 Version: 7.0

Page: 10/12 (30840187/SDS CPA US/EN)

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

<u>Assessment transport between environmental compartments</u> 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: 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. Transport Information

Land transport USDOT	
Hazard class: Packing group: ID number: Hazard label: Proper shipping name:	9 III UN 3077 9, EHSM ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains IMAZETHAPYR 90%)
Sea transport IMDG	
Hazard class: Packing group: ID number: Hazard label: Marine pollutant: Proper shipping name:	9 III UN 3077 9, EHSM YES ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains IMAZETHAPYR 90%)

Air transport IATA/ICAO

Revision date : 2022/04/26 Version: 7.0

Page: 11/12 (30840187/SDS_CPA_US/EN)

Hazard class:	9
Packing group:	III
ID number:	UN 3077
Hazard label:	9, EHSM
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains IMAZETHAPYR 90%)

Further information

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 kg or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2:10.2.7; IATA: A197; TDS: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

crop protection active ingredient

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including TOLUENE, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the 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, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label. CAUTION:

HARMFUL IF ABSORBED THROUGH SKIN. May cause moderate but temporary irritation to the eyes. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts.

16. Other Information

SDS Prepared by: BASF NA Product Regulations SDS Prepared on: 2022/04/26

Revision date : 2022/04/26 Version: 7.0

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