

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25
Version: 1.2

Page: 1/9
(30403464/SDS_CPA_US/EN)

1. Product and Company Identification

Company
BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932, USA

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

Substance number: 000000305512
Molecular formula: C₂₉ H₃₃ N₄ Cl O₈ S
Chemical family: aniline derivative, carboxylic acid amide, halogenated
Synonyms: pendimethalin ; dimethenamid-p

2. Hazards Identification

Emergency overview

CAUTION:
May cause moderate but temporary irritation to the eyes.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of dusts.

See Product Label for additional precautionary statements.

State of matter: solid
Colour: yellow to brown
Odour: characteristic

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Moderately toxic after single ingestion. Slightly toxic after short-term skin contact. Slightly toxic after short-term inhalation.

Irritation / corrosion:

May cause slight irritation to the skin. May cause slight irritation to the eyes.

Sensitization:

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25

Page: 2/9

Version: 1.2

(30403464/SDS_CPA_US/EN)

Caused skin sensitization in animal studies.

Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

Signs and symptoms of overexposure:

orange-red coloured urine caused by dye (not associated with methemoglobinemia)

Potential environmental effects

Aquatic toxicity:

Very toxic (acute effect) to aquatic organisms.

Terrestrial toxicity:

Acutely harmful to terrestrial organisms.

Degradation / environmental fate:

Not readily biodegradable (by OECD criteria).

3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
40487-42-1	1.0 %	pendimethalin
163515-14-8	0.75 %	S-dimethenamid
	98.25 %	Proprietary ingredients

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.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

Note to physician

Antidote: No known specific antidote.
Treatment: Treat symptomatically.

5. Fire-Fighting Measures

Flash point: not applicable
Autoignition: not applicable

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25

Page: 3/9

Version: 1.2

(30403464/SDS_CPA_US/EN)

Lower explosion limit:	not determined
Upper explosion limit:	not determined
Self-ignition temperature:	not self-igniting

Suitable extinguishing media:

foam, dry powder, carbon dioxide, water spray

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, Sulphur dioxide, nitrogen dioxide, nitrogen oxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons,
The substances/groups of substances mentioned can be released in case of fire. If product is heated above decomposition temperature, toxic vapours will be released.

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.

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.

Cleanup:

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

General advice:

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.

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25
Version: 1.2

Page: 4/9
(30403464/SDS_CPA_US/EN)

Storage

General advice:

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.

Storage incompatibility:

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Temperature tolerance

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls and 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) organic vapour/particulate respirator. 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.

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25
Version: 1.2

Page: 5/9
(30403464/SDS_CPA_US/EN)

9. Physical and Chemical Properties

Form:	free flowing, granules	
Odour:	characteristic	
Colour:	yellow to brown	
pH value:	4.7	(25 °C)
Melting point:		The substance / product decomposes therefore not determined.
Boiling point:		The product is a non-volatile solid., not applicable
Vapour pressure:		negligible
Bulk density:	660 kg/m3 38 lb/ft3	
Vapour density:		not determined
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:		not applicable
Viscosity, kinematic:		not applicable
Solubility in water:		dispersible, insoluble

10. Stability and Reactivity

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. 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.

Substances to avoid:

strong oxidizing agents, strong reducing agents

Hazardous reactions:

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

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, Sulphur dioxide, nitrogen dioxide, nitrogen oxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

11. Toxicological information

Acute toxicity

Oral:

Type of value: LD50

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25

Page: 6/9

Version: 1.2

(30403464/SDS_CPA_US/EN)

Species: rat
Value: > 2,000 mg/kg (OECD Guideline 423)

Inhalation:

Type of value: LC50
Species: rat
Value: > 5.103 mg/l

Dermal:

Type of value: LD50
Species: rat
Value: > 2,000 mg/kg (OECD Guideline 402)

Irritation / corrosion

Skin:

Species: rabbit
Result: non-irritant
Method: OECD Guideline 404

Eye:

Species: rabbit
Result: Irritant.
Method: OECD Guideline 405

Sensitization:

No sensitizing effect.

Genetic toxicity

Information on: dimethenamid-P

Results from a number of mutagenicity studies with microorganisms and mammalian cell culture are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

Information on: pendimethalin

No mutagenic effect was found in various tests with microorganisms and mammals.

Carcinogenicity

Information on: dimethenamid-P

The induction of tumors in animal studies was due to a reversible, nongenotoxic effect for which a threshold dose can be derived. Indication of possible carcinogenic effect in animal tests.

Information on: pendimethalin

In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed. In long-term studies in rats the substance induced thyroid tumors. A marked decrease in body weight gain and an increase in benign thyroid proliferative lesions were observed in the lifetime rat study at the highest dose tested. The substance is not considered to pose a carcinogenic risk at low human exposure levels.

Reproductive toxicity

Information on: dimethenamid-P

The results of animal studies gave no indication of a fertility impairing effect.

Information on: pendimethalin

The results of animal studies gave no indication of a fertility impairing effect.

Development:

Information on: dimethenamid-P

Causes developmental effects in animals at high, maternally toxic doses.

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25
Version: 1.2

Page: 7/9
(30403464/SDS_CPA_US/EN)

Information on: pendimethalin
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

12. Ecological Information

Fish

Information on: dimethenamid-P
Acute:
Cyprinodon variegatus/LC50: 12 mg/l
Lepomis macrochirus/LC50: 10.0 mg/l

Information on: pendimethalin
Acute:
Oncorhynchus mykiss/LC50 (96 h): 0.89 mg/l

Aquatic invertebrates

Information on: pendimethalin
Acute:
Daphnia magna/EC50 (48 h): 0.977 mg/l

Information on: (S)-dimethenamid
Acute:
Daphnia magna/EC50 (48 h): 12 mg/l
Mysid shrimp/LC50 (96 h): 3.2 mg/l

Aquatic plants

Information on: dimethenamid-P
Toxicity to aquatic plants:
Algae/EC50: 0.38 mg/l
Algae/EC50: 34 mg/l

Information on: pendimethalin
Toxicity to aquatic plants:
green algae/EC50 (72 h): 0.0081 mg/l

Non-Mammals

Information on: dimethenamid-P
Other terrestrial non-mammals:
bobwhite quail/LD50: 1,068 mg/kg
bobwhite quail/LC50: > 5,620 mg/kg
mallard duck/LC50: > 5,620 mg/kg
Honey bee/LD50 (24 d): > 1000 ug/bee

Information on: pendimethalin
Other terrestrial non-mammals:
mallard duck/LD50: 1,421 mg/kg
Acutely harmful to terrestrial organisms.
Honey bee/LD50: 49.8 ug/bee
Acutely harmful to terrestrial organisms.

Other adverse effects:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25
Version: 1.2

Page: 8/9
(30403464/SDS_CPA_US/EN)

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: D028

The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assignments.

14. Transport Information

Reference Bill of Lading

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

OSHA hazard category: Skin and/or eye irritant;

EPCRA 311/312 (Hazard categories): Acute;

State regulations

CA Prop. 65:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

16. Other Information

Refer to product label for EPA registration number.

Recommended use: herbicide

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our

Safety Data Sheet

FREEHAND HERBICIDE

Revision date : 2012/01/25

Page: 9/9

Version: 1.2

(30403464/SDS_CPA_US/EN)

products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:

BASF NA Product Regulations

msds@basf.com

MSDS Prepared on: 2012/01/25

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE , IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET