

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 1/8
(30214637/MDS_CPA_US/EN)

1. Substance/preparation and company identification

Company
BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932

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

Substance number: 000000134581
Molecular formula: C₁₈ H₁₂ Cl₂ N₂ O
Molecular weight: 343.21 g/mol
Chemical family: carboxylic acid amide
Synonyms: boscalid (active ingredient)

2. Composition/information on ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
188425-85-6	70.0 %	Boscalid
	30.0 %	Proprietary ingredients

3. Hazard identification

Emergency overview

WARNING: Causes substantial but temporary eye injury.
HARMFUL IN CONTACT WITH SKIN.
HARMFUL IF SWALLOWED.
MAY CAUSE ALLERGIC SKIN REACTION.
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Avoid contact with the skin, eyes and clothing.

Potential health effects

See Product Label for additional precautionary statements.

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:

May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Sensitization:

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 2/8
(30214637/MDS_CPA_US/EN)

Skin sensitizing effects were not observed in animal studies. Some individuals may develop an allergic dermatitis.

Medical conditions aggravated by overexposure:

Individuals with allergic history or pre-existing dermatitis should use extra precautions when handling this product.

Potential environmental effects

Aquatic toxicity:

Acutely toxic for aquatic organisms.

Terrestrial toxicity:

With high probability not acutely harmful to terrestrial organisms.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-fighting measures

Flash point:

No data available.

Suitable extinguishing media:

foam, dry extinguishing media, carbon dioxide, water spray

Hazards during fire-fighting:

carbon monoxide, Carbon dioxide, nitrogen oxides, acid halides

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 3/8
(30214637/MDS_CPA_US/EN)

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.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

NFPA Hazard codes:

Health : 1 Fire: 3 Reactivity: 1 Special:

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 up 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.

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 4/8
(30214637/MDS_CPA_US/EN)

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

Temperature tolerance

Protect from temperatures above: 104 °F

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.

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.

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 5/8
(30214637/MDS_CPA_US/EN)

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:	granules	
Odour:	odourless	
Colour:	beige to brown	
pH value:	6.5 - 7.5	(10 g/l)
Density:	0.464 g/cm ³	
Bulk density:	470 - 600 kg/m ³	
Solubility in water:		dispersible

10. Stability and reactivity

Dust explosivity characteristics:

Kst: 265 m.bar/s
Pmax = 7.2 BARA

Dust explosion class:

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

Minimum ignition energy:

36 - 45 mJ

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.

Limiting oxygen concentration: 10.5 volume %

Avoid all sources of ignition: heat, sparks, open flame. 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:

acids, bases, strong oxidizing 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:

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:

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 6/8
(30214637/MDS_CPA_US/EN)

215 °C (DSC (DIN 51007))

Possible thermal decomposition products:

carbon monoxide, Carbon dioxide, nitrogen monoxide, nitrogen dioxide, Hydrogen chloride

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

Corrosion to metals:

Corrosive effects to metal are not anticipated.

11. Toxicological information

Acute toxicity

Oral:

LD50/rat/male/female: > 2,000 mg/kg

Inhalation:

LC50/rat/male/female: > 5.4 mg/l / 4 h

Dermal:

LD50/rat/male/female: > 2,000 mg/kg

Skin irritation:

rabbit: Nonirritating.

Eye irritation :

rabbit: moderately irritating

Chronic toxicity

Genetic toxicity:

Information on: Boscalid

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

Carcinogenicity:

Information on: Boscalid

In long-term studies in rats the substance induced thyroid tumors.

Reproductive toxicity:

Information on: Boscalid

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

Developmental toxicity/teratogenicity:

Information on: Boscalid

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 7/8
(30214637/MDS_CPA_US/EN)

Other information:

Misuse can be harmful to health.

12. Ecological information

*Information on: Boscalid**Acute and prolonged toxicity to fish:*

Rainbow trout/LC50 (96 h): 2.7 mg/l

sunfish, bluegill/LC50: > 4.0 mg/l

Nominal concentration.

*Information on: Boscalid**Acute toxicity to aquatic invertebrates:*

Daphnia magna/LC50 (48 h): 5.33 mg/l

*Information on: Boscalid**Toxicity to aquatic plants:*

green algae/EC50 (96 h): 3.75 mg/l

*Information on: Boscalid**Other terrestrial non-mammals:*

bobwhite quail/LD50: > 2,000 mg/kg

bobwhite quail/LC50: > 5,000 ppm

mallard duck/LC50: > 5,000 ppm

Honey bee/LD50: > 200 ug/bee

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.

14. Transport information

Reference Bill of Lading

Safety data sheet

EMERALD

Revision date : 2005/07/05
Version: 1.0

Page: 8/8
(30214637/MDS_CPA_US/EN)

15. Regulatory information

Federal Regulations

Registration status:

TSCA, US released / exempt

OSHA hazard category: Chronic target organ effects reported, Acute target organ effects reported, ACGIH TLV established, Toxic - inhalation

SARA hazard categories (EPCRA 311/312): Acute, Chronic

16. Other information

Refer to product label for EPA registration number.

Recommended use: crop protection product

Local contact information

Product Stewardship
919 547-2000

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 BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES 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