

# Safety Data Sheet

## PENDULUM 2G HERBICIDE

Revision date : 2012/03/14  
Version: 3.0

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(30128278/SDS\_CPA\_US/EN)

### 1. Product and Company Identification

Company  
BASF CORPORATION  
100 Park Avenue  
Florham Park, NJ 07932, USA

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

Substance number: 00000063445  
Molecular formula: C13 H19 N3 O4  
Chemical family: aniline derivative  
Synonyms: pendimethalin

### 2. Hazards Identification

#### Emergency overview

CAUTION:  
HARMFUL IF ABSORBED THROUGH SKIN.  
Moderately irritating to the eyes.  
Avoid contact with the skin, eyes and clothing.

See Product Label for additional precautionary statements.

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

#### 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:**

Relatively nontoxic after single ingestion. Slightly toxic after short-term skin contact.

##### **Irritation / corrosion:**

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

##### **Sensitization:**

There is no evidence of a skin-sensitizing potential.

#### Potential environmental effects

##### **Aquatic toxicity:**

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Very toxic (acute effect) to fish. Very toxic (acute effect) to aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

### Terrestrial toxicity:

Acutely harmful to terrestrial organisms. Acutely harmful to honeybees.

### 3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
40487-42-1	<= 2.0 %	pendimethalin
872-50-4	<= 2.0 %	2-Pyrrolidinone, 1-methyl-
14808-60-7	<= 10.0 %	crystalline silica
	<= 96.0 %	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. Assist in breathing if necessary.

#### 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:

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

#### Note to physician

Treatment: Symptomatic treatment (decontamination, vital functions).

### 5. Fire-Fighting Measures

Flash point:	not applicable
Lower explosion limit:	not determined
Upper explosion limit:	not determined
Flammability:	does not ignite
Self-ignition temperature:	not self-igniting

#### Suitable extinguishing media:

foam, dry powder, carbon dioxide, water spray

#### 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.

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### Protective equipment for fire-fighting:

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

Wear self-contained breathing apparatus and chemical-protective clothing.

### Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

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## 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.

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## 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.

### 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.

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### 8. Exposure Controls and Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

#### Components with workplace control parameters

crystalline silica	OSHA	TWA value 2.4 millions of particles per cubic foot of air Respirable ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation. TWA value 0.1 mg/m <sup>3</sup> Respirable ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation. TWA value 0.3 mg/m <sup>3</sup> Total dust ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
	ACGIH	TWA value 0.025 mg/m <sup>3</sup> Respirable fraction ;

#### **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 stuffs.

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### 9. Physical and Chemical Properties

Form:	free flowing fine granules	
Odour:	odourless	
Colour:	yellow to brown	
pH value:	approx. 5 - 7	( 1 %(m), 37 °C)
Bulk density:	620 - 650 kg/m <sup>3</sup>	
Vapour density:		not determined
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:		not applicable
Solubility in water:		dispersible

### 10. Stability and Reactivity

#### 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.

#### Substances to avoid:

strong bases, strong acids, 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. 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.

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

#### 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.

#### Corrosion to metals:

Corrosive effects to metal are not anticipated.

#### Oxidizing properties:

not fire-propagating

### 11. Toxicological information

#### Acute toxicity

##### Oral:

Type of value: LD50

Species: rat

Value: > 5,000 mg/kg

##### Inhalation:

Type of value: LC50

Species: rat

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Value: > 2.7 mg/l  
Exposure time: 4 h  
Tested as dust aerosol.  
No mortality was observed.

### Dermal:

Type of value: LD50  
Species: rat  
Value: > 2,000 mg/kg

### Irritation / corrosion

#### Skin:

Species: rabbit  
Result: non-irritant

#### Eye:

Species: rabbit  
Result: non-irritant

#### Sensitization:

modified Buehler test  
Species: guinea pig  
Result: Skin sensitizing effects were not observed in animal studies.

### Repeated dose toxicity

*Information on: pendimethalin*

*Assessment of repeated dose toxicity:*

*No substance-specific organotoxicity was observed after repeated administration of high doses to animals. Adaptive effects were observed after repeated exposure in animal studies.*

*Information on: crystalline silica*

*Assessment of repeated dose toxicity:*

*Repeated inhalation exposure may affect certain organs. The substance may cause increase in lung mass and lung tissue changes after repeated inhalation.*

*This product may contain greater than 0.1% crystalline silica. Repeated exposure to high concentrations results in silicosis, a lung disease characterized by coughing, difficult breathing, wheezing, scarring of the lungs, and repeated, non-specific chest illnesses.*

### Genetic toxicity

*Information on: pendimethalin*

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

### Carcinogenicity

*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: N-Methylpyrrolidone*

*As shown in animal studies, the product may cause damage to the testes after repeated high exposures that cause other toxic effects.*

*Information on: pendimethalin*

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

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### Development:

*Information on: N-Methylpyrrolidone*  
*The substance caused malformations/developmental toxicity in laboratory animals.*  
*Information on: pendimethalin*  
*No indications of a developmental toxic / teratogenic effect were seen in animal studies.*  
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### Other Information:

Misuse can be harmful to health.

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## 12. Ecological Information

### Fish

*Information on: pendimethalin*  
*Acute:*  
*static*  
*Oncorhynchus mykiss/LC50 (96 h): 0.138 mg/l*  
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### Aquatic invertebrates

*Information on: pendimethalin*  
*Acute:*  
*static*  
*Daphnia magna/EC50 (48 h): 0.4 mg/l*  
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### Aquatic plants

*Information on: pendimethalin*  
*Toxicity to aquatic plants:*  
*green algae/EC50 (72 h): 0.0337 mg/l*  
*static*  
*Skeletonema costatum/EC50 (5 d): 0.005 mg/l*  
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### Non-Mammals

*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.*  
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### Environmental mobility:

*Information on: pendimethalin*  
*Assessment transport between environmental compartments:*  
*Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.*  
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### Other adverse effects:

The ecological data given are those of the active ingredient.  
Do not discharge product into the environment without control.

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### 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.

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### 14. Transport Information

**Land transport**

USDOT

Not classified as a dangerous good under transport regulations

**Sea transport**

IMDG

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

**Air transport**

IATA/ICAO

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 PENDIMETHALIN)

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### 15. Regulatory Information

**Federal Regulations**

**Registration status:**

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

**OSHA hazard category:** IARC 1, 2A or 2B carcinogen; NTP listed carcinogen; Chronic target organ effects reported



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**EPCRA 311/312 (Hazard categories):** Acute; Chronic

**EPCRA 313:**

**CAS Number**

872-50-4

40487-42-1

**Chemical name**

N-Methylpyrrolidone

pendimethalin

**State regulations**

**State RTK**

MA, PA

MA, NJ, PA

**CAS Number**

872-50-4

14808-60-7

**Chemical name**

2-Pyrrolidinone, 1-methyl-

crystalline silica

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

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**MSDS Prepared by:**

BASF NA Product Regulations

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MSDS Prepared on: 2012/03/14

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