

# Safety Data Sheet

## Irgacure® 819

Revision date : 2015/04/30

Version: 2.0

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(30128871/SDS\_GEN\_US/EN)

### 1. Identification

#### Product identifier used on the label

## Irgacure® 819

#### Recommended use of the chemical and restriction on use

\* 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

##### Company:

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

Telephone: +1 973 245-6000

#### Emergency telephone number

CHEMTREC: 1-800-424-9300  
BASF HOTLINE: 1-800-832-HELP (4357)

#### Other means of identification

Chemical family: photoinitiator

### 2. Hazards Identification

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

#### Classification of the product

Skin Sens.	1	Skin sensitization
Aquatic Chronic	4	Hazardous to the aquatic environment - chronic
Combustible Dust	Combustible Dust (1)	Combustible Dust

#### Label elements

Pictogram:

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Signal Word:  
Warning

Hazard Statement:

H317 May form combustible dust concentration in air.  
H317 May cause an allergic skin reaction.  
H413 May cause long lasting harmful effects to aquatic life.

Precautionary Statements (Prevention):

P280 Wear protective gloves.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P273 Avoid release to the environment.  
P272 Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):

P303 + P352 IF ON SKIN (or hair): Wash with plenty of soap and water.  
P333 + P311 If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.  
P362 + P364 Take off contaminated clothing and wash before reuse.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection point.

### Hazards not otherwise classified

The product is under certain conditions capable of dust explosion.

**According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

### Emergency overview

CAUTION:  
Skin sensitization  
Avoid skin contact.  
Refer to MSDS Section 7 for Dust Explosion information.

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## 3. Composition / Information on Ingredients

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

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
162881-26-7	>= 75.0 - <= 100.0 %	Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)-

**According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

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### 4. First-Aid Measures

#### Description of first aid measures

##### General advice:

Immediately remove contaminated clothing.

##### If inhaled:

If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

##### If on skin:

Wash affected areas thoroughly with soap and water. Seek medical attention.

##### If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. If irritation develops, seek medical attention.

##### If swallowed:

Immediately rinse mouth and then drink plenty of water, do not induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

#### Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

#### Indication of any immediate medical attention and special treatment needed

##### Note to physician

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

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### 5. Fire-Fighting Measures

#### Extinguishing media

Suitable extinguishing media:  
dry powder, foam

Unsuitable extinguishing media for safety reasons:  
carbon dioxide

##### Additional information:

Avoid whirling up the material/product because of the danger of dust explosion.

#### Special hazards arising from the substance or mixture

##### Hazards during fire-fighting:

phosphorus oxides, harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

#### Advice for fire-fighters

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Protective equipment for fire-fighting:  
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### Further information:

Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

### Impact Sensitivity:

Assessment: Product is not explosive when subjected to mechanical impact.

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## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective clothing.

### Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

### Methods and material for containment and cleaning up

For small amounts: Pick up with suitable appliance and dispose of.

For large amounts: Contain with dust binding material and dispose of.

Avoid raising dust.

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## 7. Handling and Storage

### Precautions for safe handling

Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Closed containers should only be opened in well-ventilated areas.

Protection against fire and explosion:

Danger! Explosion Risk - Combustible powder. - Risk of explosion if an air-dust mixture forms. - Avoid creating dusty conditions. - Empty only into grounded containers. - If container is larger than 550 gallons (2m3) or if flammable solvents are present, the container must be inerted or the system otherwise designed to prevent or contain an explosion. Seek expert advice. In addition, for products packaged in fused-lined (coated) fiber drums, fiber drums with conductive liners, steel drums, steel pails, and Type C FIBC (bulk bags), the following instructions also apply: - Always ground this package before emptying. The user is responsible for designing the system to handle solid and ensuring proper training of employees in the system's use.

### Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Protect from the effects of light.

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## 8. Exposure Controls/Personal Protection

### Personal protective equipment

#### Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

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Observe OSHA regulations for respirator use (29 CFR 1910.134).

### Hand protection:

Chemical resistant protective gloves

### Eye protection:

Safety glasses with side-shields. Wear face shield if splashing hazard exists.

### Body protection:

Impermeable protective clothing

### General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and Chemical Properties

Form:	powder	
Odour:	characteristic	
Odour threshold:		not determined
Colour:	light yellow	
Melting point:	127 - 132 °C	(Directive 92/69/EEC, A.1)
Boiling point:	> 168 °C	( 1,013 mbar) (OECD Guideline 103) The substance / product decomposes.
Flash point:		not applicable, the product is a solid
Flammability:	not highly flammable	(Directive 84/449/EEC, A.10)
Upper explosion limit:		For solids not relevant for classification and labelling.
Autoignition:	580 °C	(BAM)
Vapour pressure:	< 0.0000005 Pa	( 25 °C) (Directive 84/449/EEC, A.4)
Density:	1.19 g/cm <sup>3</sup>	( 21 °C) (Directive 92/69/EEC, A.3)
Relative density:	1.19	( 20 °C) (Directive 92/69/EEC, A.3)
Bulk density:	601 kg/m <sup>3</sup>	
Vapour density:		The product is a non-volatile solid.
Partitioning coefficient n-octanol/water (log Pow):	5.8	( 22 °C) (OECD Guideline 117)
Self-ignition temperature:		(Directive 92/69/EEC, A.16) not self-igniting not self-igniting
Thermal decomposition:	> 150 °C	
Viscosity, dynamic:		Study does not need to be conducted.
Particle size:	D50 25.46 µm	(measured)
Solubility in water:	< 0.1 mg/l	( 20 °C)
Solubility (quantitative):		No data available.
Solubility (qualitative):	soluble	
	solvent(s): Ethanol, Methanol	
Molar mass:	418.47 g/mol	
Evaporation rate:		The product is a non-volatile solid.

## 10. Stability and Reactivity

### Reactivity

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

### Oxidizing properties:

not fire-propagating (Directive 84/449/EEC, A.17)

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Minimum ignition energy:

The product is capable of dust explosion.

### Chemical stability

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

### Possibility of hazardous reactions

Dust explosion hazard.

### Conditions to avoid

Avoid dust formation. Avoid deposition of dust. Avoid sources of ignition. Avoid electro-static discharge.

### Incompatible materials

strong acids, strong bases, strong oxidizing agents

### Hazardous decomposition products

Decomposition products:

Possible thermal decomposition products: carbon oxides, phosphorus oxides, harmful vapours

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

Thermal decomposition:

> 150 °C

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## 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

#### Oral

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg (OECD Guideline 401)

No mortality was observed.

#### Inhalation

No data available.

#### Dermal

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg (OECD Guideline 402)

No mortality was observed.

#### Assessment other acute effects

Assessment of STOT single:

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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: Not irritating to eyes and skin.

### Skin

Species: rabbit

Result: non-irritant

Method: OECD Guideline 404

### Eye

Species: rabbit

Result: non-irritant

Method: OECD Guideline 405

### Sensitization

Assessment of sensitization: sensitizing effect in animal tests

Guinea pig maximization test

Species: guinea pig

Result: sensitizing

Method: OECD Guideline 406

### Aspiration Hazard

not applicable

## **Chronic Toxicity/Effects**

### Repeated dose toxicity

Assessment of repeated dose toxicity: The information available on the product provides no indication of toxicity on target organs after repeated exposure.

Experimental/calculated data: rat oral unspecified 28 d

NOAEL: 1,000 mg/kg

### Genetic toxicity

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

### Carcinogenicity

Assessment of carcinogenicity: No data available concerning carcinogenic effects.

### Reproductive toxicity

Assessment of reproduction toxicity: Repeated oral uptake of the substance did not cause damage to the reproductive organs.

### Teratogenicity

Assessment of teratogenicity: In animal studies the substance did not cause malformations.

## **Symptoms of Exposure**

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

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## 12. Ecological Information

### Toxicity

#### Aquatic toxicity

##### Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. No toxic effects occur within the range of solubility. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

#### Toxicity to fish

LC50 (96 h) > 90 µg/l, Brachydanio rerio (OECD 203; ISO 7346; 84/449/EEC, C.1, semistatic)  
No toxic effects occur within the range of solubility.

#### Aquatic invertebrates

EC50 (48 h) > 1175 µg/l, Daphnia magna (OECD Guideline 202, part 1, static)  
No toxic effects occur within the range of solubility.

#### Aquatic plants

EC50 (72 h) >= 260 µg/L (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)  
No toxic effects occur within the range of solubility.

#### Chronic toxicity to fish

Study scientifically not justified.

#### Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) >= 8 µg/L, Daphnia magna (OECD Guideline 211, semistatic)  
The statement of the toxic effect relates to the analytically determined concentration. No toxic effects occur within the range of solubility.

#### Assessment of terrestrial toxicity

No toxic effects have been observed in studies with soil living organisms.

#### Soil living organisms

##### Toxicity to soil dwelling organisms:

LC50 (56 d) > 1,000 mg/kg, Eisenia foetida (OECD Guideline 222, artificial soil)  
No effects at the highest test concentration.

other (28 d) > 1,000 mg/kg, soil dwelling microorganisms (OECD 216)

No effects at the highest test concentration.

#### Toxicity to terrestrial plants

Study scientifically not justified.

#### Other terrestrial non-mammals

No data available.

### Microorganisms/Effect on activated sludge

#### Toxicity to microorganisms

OECD Guideline 209 aquatic



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activated sludge, domestic/EC50 (3 h): > 100 mg/l

### Persistence and degradability

#### Assessment biodegradation and elimination (H2O)

Not readily biodegradable (by OECD criteria). Poorly biodegradable.

#### Elimination information

1 % CO<sub>2</sub> formation relative to the theoretical value (29 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted)

### Bioaccumulative potential

#### Assessment bioaccumulation potential

Does not significantly accumulate in organisms.

#### Bioaccumulation potential

Bioconcentration factor: < 5 (28 d), Cyprinus carpio (OECD Guideline 305 E)

### Mobility in soil

#### Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is expected.

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## 13. Disposal considerations

### **Waste disposal of substance:**

Do not discharge into drains/surface waters/groundwater. Dispose of in accordance with national, state and local regulations.

### **Container disposal:**

Dispose of in accordance with national, state and local regulations. 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

Not classified as a dangerous good under transport regulations

### **Air transport**

IATA/ICAO

Not classified as a dangerous good under transport regulations

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## 15. Regulatory Information

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### Federal Regulations

#### Registration status:

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Fire (Combustible Dust);

#### NFPA Hazard codes:

Health : 2 Fire: 1 Reactivity: 0 Special:

#### HMIS III rating

Health: 2 Flammability: 1 Physical hazard: 0

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## 16. Other Information

#### SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2015/04/30

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