Safety Data Sheet
Irgafos® 168

1. Product and Company Identification

Use: antioxidant

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

2. Hazards Identification

Emergency overview

NOTICE:
Contact with the eyes or skin may cause mechanical irritation.
AVOID CREATING DUST.
CAN FORM EXPLOSIVE DUST-AIR MIXTURES.
Product may present a nuisance dust hazard.
Refer to MSDS Section 7 for Dust Explosion information.

State of matter: solid
Colour: white
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.

Irritation / corrosion:
Not irritating to eyes and skin.

Sensitization:
No sensitizing effect.

Chronic toxicity:

Carcinogenicity: None of the components in this product at concentrations greater than 0.1% are listed by IARC; NTP, OSHA or ACGIH as a carcinogen.

Reproductive toxicity: Not expected to cause reproductive toxicity. (based on composition)

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

Genotoxicity: Mutagenicity tests revealed no genotoxic potential.

Potential environmental effects

Aquatic toxicity:
May be harmful to aquatic plant or animal life, especially if a large quantity is released.

3. Composition / Information on Ingredients

CAS Number	Content (W/W)	Chemical name
31570-04-4	50.0 - 100.0 %	Phenol, 2,4-bis(1,1-dimethylethyl)-, phosphite (3:1)

4. First-Aid Measures

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.

Seek medical attention.

If swallowed:
Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.

Note to physician

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

5. Fire-Fighting Measures

Flash point:	> 150 °C	(DIN 51584)
Autoignition:	400 °C	(BAM)
	380 °C	(BAM)

Suitable extinguishing media:
dry powder, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:
water jet

Hazards during fire-fighting:
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

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.

6. Accidental release measures

Personal precautions:
Avoid dust formation. Use personal protective clothing.

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

Cleanup:
Avoid raising dust.
For small amounts: Pick up with suitable appliance and dispose of.
For large amounts: Contain with dust binding material and dispose of.

7. Handling and Storage

Handling

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

Protection against fire and explosion:
Avoid dust formation. Take precautionary measures against static discharges.

Storage

General advice:
Keep container tightly closed and dry; store in a cool place.

8. Exposure Controls and Personal Protection

Personal protective equipment

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

Hand protection:
Chemical resistant protective gloves

Eye protection:
Safety glasses with side-shields.

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:	crystalline, powder	
Odour:	odourless	
Colour:	white	
pH value:	6	(1 %(m), 20 - 25 °C) (as suspension)
Melting point:	183 - 186 °C	
Boiling point:		not applicable
Sublimation point:		
Density:	1.03 g/cm3	(20 °C)

Partitioning coefficient n-octanol/water (log Pow):	> 6	(20 - 25 °C)	(calculated)
% volatiles:		not determined	
Solubility in water:	< 0.005 mg/l		

10. Stability and Reactivity

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

Conditions to avoid:
Avoid electro-static discharge.

Substances to avoid:
strong oxidizing agents, strong acids, strong bases

Hazardous reactions:
Dust explosion hazard.

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

Thermal decomposition:
240 °C (DTA)

> 350 °C (Temperature program (Lütolf))

> 350 °C (Isoperibolic (Lütolf oven))

11. Toxicological information

Acute toxicity

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

Inhalation:

No data available concerning acute toxicity.

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

Irritation / corrosion

Skin:
Species: rabbit
Result: non-irritant

Eye:
Species: rabbit
Result: non-irritant

Sensitization:

Species: guinea pig
Result: Non-sensitizing.
Optimization Test:

Other Information:

White leghorn hen - No signs of neurotoxicity.

12. Ecological Information

Fish

Acute:
OECD 203; ISO 7346; 92/69/EEC, C.1 Fish/LC50 (96 h): > 100 mg/l
No effects at the highest test concentration. Tested above maximum solubility.

Aquatic invertebrates

Acute:
OECD Guideline 202, part 1 Daphnia magna/EC50 (24 h): 510 mg/l

Aquatic plants

Toxicity to aquatic plants:
Guideline 92/69/EEC, C.3 Algae/EC50 (72 h): > 75.2 mg/l
Tested above maximum solubility. No toxic effects occur within the range of solubility. No effects at the highest test concentration.

Microorganisms

Toxicity to microorganisms:
OECD Guideline 209 activated sludge/EC50 (3 h): > 100 mg/l

Degradability / Persistence
Biological / Abiological Degradation
Test method: OECD 301B; ISO 9439; 92/69/EEC, C.4-C
Evaluation: Not readily biodegradable (by OECD criteria).

Bioaccumulation
calculated
Bioconcentration factor < 17

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.

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

15. Regulatory Information

VOC content:

not determined

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

OSHA hazard category: This material is classified as not hazardous under OSHA regulations.;

EPCRA 311/312 (Hazard categories): Not hazardous;

State regulations

CA Prop. 65:
There are no listed chemicals in this product.

16. Other Information

NFPA Hazard codes:
Health : 1 Fire: 1 Reactivity: 0 Special:

HMIS III rating
Health: 1 Flammability: 1 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

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.

MSDS Prepared by:

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Due to the merger of CIBA and BASF Group all Material Safety Data Sheets have been reassessed on the basis of consolidated information. This may have resulted in changes of the Material Safety Data Sheets. In case you have questions concerning such changes please contact us at the address mentioned in Section I.

END OF DATA SHEET