

# Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 25.11.2014

Version: 5.2

Product: **Irgafos® 168**

(ID no. 30497213/SDS\_GEN\_EU/EN)

Date of print 18.09.2015

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

#### **Irgafos® 168**

Chemical name: tris(2,4-di-tert-butylphenyl) phosphite

CAS Number: 31570-04-4

REACH registration number: 01-2119491176-33-0001, 01-2119491176-33-0000

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: antioxidant

Not recommended use: This material is not intended for use in products for which prolonged contact with mucous membranes, body fluids or abraded skin, or implantation within the human body, is specifically intended, unless the finished product has been tested in accordance with nationally and internationally applicable safety testing requirements. Because of the wide range of such potential uses, we are not able to recommend this material as safe and effective for such uses and assume no liability for such uses.

### 1.3. Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Antioxidants/ Process stabilizers

Telephone: +49 621 60-58197

E-mail address: psr.plasticadditives@basf.com

### 1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

No need for classification according to GHS criteria for this product.

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:

The product is under certain conditions capable of dust explosion.

### 2.2. Label elements

Globally Harmonized System, EU (GHS)

The product does not require a hazard warning label in accordance with GHS criteria.

According to Directive 67/548/EEC or 1999/45/EC

as in Annex VI of Directive 67/548/EEC

The product does not require a hazard warning label in accordance with EC Directives.

### 2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

The product is under certain conditions capable of dust explosion.

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## SECTION 3: Composition/Information on Ingredients

### 3.1. Substances

Chemical nature

Tris(2,4-ditert-butylphenyl) phosphite

CAS Number: 31570-04-4

EC-Number: 250-709-6

### 3.2. Mixtures

Not applicable

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## SECTION 4: First-Aid Measures

### 4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:

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

On skin contact:

Wash thoroughly with soap and water.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:

Rinse mouth and then drink plenty of water.

### 4.2. 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.

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

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

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## SECTION 5: Fire-Fighting Measures

### 5.1. 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.

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

harmful vapours

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

### 5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

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## SECTION 6: Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective clothing.

### 6.2. Environmental precautions

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

### 6.3. 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.

### 6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

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## SECTION 7: Handling and Storage

### 7.1. Precautions for safe handling

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

Protection against fire and explosion:

Avoid dust formation. Take precautionary measures against static discharges.

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

### 7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

### 7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

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## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

#### Components with occupational exposure limits

No occupational exposure limits known.

### 8.2. Exposure controls

#### Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen based on level of activity and exposure.

#### General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Form:	crystalline, powder
Colour:	white
Odour:	odourless
Odour threshold:	No applicable information available.
pH value:	6 (1 %(m), 20 - 25 °C) (as suspension)
Melting point:	183 - 186 °C

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Boiling point:	not applicable	
Flash point:	> 150 °C	(DIN 51584)
Evaporation rate:	The product is a non-volatile solid.	
Flammability:	not highly flammable	(Directive 84/449/EEC, A.10)
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Ignition temperature:	400 °C	(BAM)
Vapour pressure:	< 0.0000085 hPa (20 °C)	(measured)
Density:	1.03 g/cm <sup>3</sup> (20 °C)	
Solubility in water:	< 0.005 mg/l (20 °C)	(Directive 92/69/EEC, A.6)
Partitioning coefficient n-octanol/water (log Kow):	> 6 (20 - 25 °C)	(calculated)
Thermal decomposition:	> 350 °C	
Viscosity, dynamic:	not determined	
Explosion hazard:	not explosive	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

## 9.2. Other information

Self heating ability: It is not a substance capable of spontaneous heating.

Minimum ignition energy: No data available.

Bulk density: approx. 360 kg/m<sup>3</sup>

Hygroscopy: not applicable

Molar mass: 646.93 g/mol

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

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## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

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

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Corrosion to metals:	No corrosive effect on metal.	
Reactions with water/air:	Reaction with:	water
	Flammable gases:	no
	Toxic gases:	no
	Corrosive gases:	no
	Smoke or fog:	no
	Peroxides:	no
	Reaction with:	air
	Flammable gases:	no
	Toxic gases:	no
	Corrosive gases:	no
	Smoke or fog:	no
	Peroxides:	no
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
	Oven temperature:	220 °C
	Specific decomposition gas volume:	< 5 l/kg

**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

Dust explosion hazard.

**10.4. Conditions to avoid**

Avoid dust formation. Avoid deposition of dust. Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge.

**10.5. Incompatible materials**Substances to avoid:  
strong oxidizing agents, strong acids, strong bases**10.6. Hazardous decomposition products**Hazardous decomposition products:  
No hazardous decomposition products if stored and handled as prescribed/indicated.

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**SECTION 11: Toxicological Information****11.1. Information on toxicological effects**Acute toxicity

Experimental/calculated data:

LD50 rat (oral): > 2,000 mg/kg

LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)

#### Irritation

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant

Serious eye damage/irritation rabbit: non-irritant

#### Respiratory/Skin sensitization

Experimental/calculated data:

other guinea pig: Non-sensitizing.

#### Germ cell mutagenicity

Assessment of mutagenicity:

Based on the ingredients, there is no suspicion of a mutagenic effect.

Experimental/calculated data:

Ames-test

negative

#### Carcinogenicity

Assessment of carcinogenicity:

Based on the ingredients there is no suspicion of a carcinogenic effect in humans.

#### Reproductive toxicity

Assessment of reproduction toxicity:

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

#### Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

#### Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No adverse effects were observed after repeated exposure in animal studies.

#### Aspiration hazard



No aspiration hazard expected.

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## SECTION 12: Ecological Information

### 12.1. Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:

LC50 (96 h) > 100 mg/l, Fish (OECD 203; ISO 7346; 92/69/EEC, C.1)

No effects at the highest test concentration. Tested above maximum solubility.

Aquatic invertebrates:

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

Aquatic plants:

EC50 (72 h) > 75.2 mg/l, Scenedesmus sp. (Guideline 92/69/EEC, C.3)

Tested above maximum solubility. No effects at the highest test concentration.

Microorganisms/Effect on activated sludge:

EC50 (3 h) > 100 mg/l, activated sludge (OECD Guideline 209)

### 12.2. Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):

The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants.

Elimination information:

(OECD 301B; ISO 9439; 92/69/EEC, C.4-C) Not readily biodegradable (by OECD criteria).

### 12.3. Bioaccumulative potential

Bioaccumulation potential:

Based on a weight of evidence, the compound will not bioaccumulate.

### 12.4. Mobility in soil

Assessment transport between environmental compartments:

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

### 12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

## 12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

## 12.7. Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

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## SECTION 13: Disposal Considerations

### 13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Uncontaminated packaging can be re-used.

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

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## SECTION 14: Transport Information

### Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

**Inland waterway transport**

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known
Transport in inland waterway vessel:	Not evaluated

**Sea transport**

IMDG

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

**Air transport**

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

**14.1. UN number**

See corresponding entries for "UN number" for the respective regulations in the tables above.

**14.2. UN proper shipping name**

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

**14.3. Transport hazard class(es)**

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

**14.4. Packing group**

See corresponding entries for "Packing group" for the respective regulations in the tables above.

**14.5. Environmental hazards**

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

**14.6. Special precautions for user**

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

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**SECTION 15: Regulatory Information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006

Restrictions of Regulation (EC) No 1907/2006, Annex XVII, do not apply for the intended use(s) of the product given in this MSDS.

**15.2. Chemical Safety Assessment**

Chemical Safety Assessment performed

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**SECTION 16: Other Information**Assessment of the hazard classes according to UN GHS criteria (most recent version)

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility

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of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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