

Material Safety Data Sheet (MSDS / SDS)

Antioxidant 168 - Secondary Phosphite Antioxidant

SECTION 1: Identification

Product Name	Antioxidant 168 (Tris(2,4-Di-tert-Butylphenyl) Phosphite)
Synonyms	Antioxidant 168, Irgafos 168 (type), AO-168, Tris(2,4-Di-tert-Butylphenyl) Phosphite
CAS No.	31570-04-4
Recommended Use	Secondary (hydroperoxide-decomposing) antioxidant for polyolefin, engineering plastics and fibre stabilisation, used in combination with primary phenolic antioxidants
Manufacturer / Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India - 248001
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SECTION 2: Hazard(s) Identification

GHS Classification: Not classified as hazardous under GHS for acute health hazards based on available data. Combustible organic solid; may hydrolyse to release 2,4-di-tert-butylphenol, a degradation product with aquatic toxicity relevance.

Signal Word: None (not classified) - general good-handling-practice and combustible-dust precautions apply; aquatic-release caution applies (see below)

Hazard Statements:

- Not classified as a hazardous substance or mixture under GHS/CLP for acute health hazards based on available data
- Combustible organic dust - finely divided powder dispersed in air can pose a combustible dust hazard in bulk processing
- May hydrolyse (particularly in moist conditions) to release 2,4-di-tert-butylphenol, a phenolic degradation product associated with aquatic toxicity - avoid release to waterways

Precautionary Statements:

- P210 – Keep away from heat, hot surfaces, sparks, open flames – No smoking
- P241 – Use explosion-proof electrical/ventilating/lighting equipment in dusty environments
- P264 – Wash hands thoroughly after handling
- P271 – Use only outdoors or in a well-ventilated area
- P273 – Avoid release to the environment
- P280 – Wear protective gloves/eye protection

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration (w/w)
Tris(2,4-Di-tert-Butylphenyl) Phosphite	31570-04-4	Min. 98%
Moisture / Minor Hydrolysis Products (residual)	–	< 2% (combined)

SECTION 4: First-Aid Measures

Eye Contact	Rinse with plenty of water for several minutes to remove dust particles. Seek medical attention if irritation persists.
Skin Contact	Wash with soap and water. Generally non-irritating; seek medical attention if irritation develops.
Inhalation	Move to fresh air. If coughing or respiratory discomfort from dust persists, seek medical attention.
Ingestion	Rinse mouth with water. Not expected to be harmful in small amounts; seek medical attention if a large quantity is ingested or discomfort occurs.

SECTION 5: Fire-Fighting Measures

- Combustible organic solid; finely divided dust can pose a combustible dust explosion hazard in confined spaces

- Suitable extinguishing media: water spray/fog, foam, CO₂, dry chemical – avoid methods that disperse settled dust near an ignition source
- Fire-fighters should wear SCBA in enclosed or heavily smoke-logged conditions

SECTION 6: Accidental Release Measures

- Avoid generating dust during clean-up; use damp cleaning methods or HEPA-filtered vacuum where practical
- Sweep or vacuum into suitable containers for reuse or disposal, keeping away from ignition sources and moisture
- Prevent entry into drains, sewers or waterways – hydrolysis products have aquatic toxicity relevance

SECTION 7: Handling and Storage

- Avoid generating and inhaling dust; use local exhaust ventilation and bond/ground equipment during bulk powder transfer
- Keep dry – moisture exposure promotes hydrolysis to 2,4-di-tert-butylphenol
- Store in a cool, dry, well-ventilated area away from direct sunlight and ignition sources
- Keep containers tightly sealed to prevent moisture pickup and oxidation

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits	No specific OEL established; treat as Particulates Not Otherwise Regulated (nuisance dust), general reference 10 mg/m ³ total dust, 8-hr TWA
Engineering Controls	Local exhaust ventilation and explosion-proof equipment at dust-generating process steps
Eye/Face Protection	Safety glasses or goggles recommended in dusty conditions
Hand Protection	General-purpose work gloves sufficient for routine handling
Respiratory Protection	Dust mask (N95 or equivalent) recommended where airborne dust levels are elevated

SECTION 9: Physical and Chemical Properties

Property	Unit	Value
Appearance	–	White crystalline powder
Odour	–	Odourless
Melting Point	°C	183 – 186
Solubility in Water	–	Insoluble
Flash Point	–	Not applicable (solid); combustible dust hazard applies to fine powder

SECTION 10: Stability and Reactivity

- Stable under normal, dry conditions of storage, handling and use
- Hydrolyses in the presence of moisture to release 2,4-di-tert-butylphenol – keep dry to preserve product quality and avoid this degradation pathway
- Combustible dust hazard when finely dispersed in air – avoid ignition sources during bulk handling
- Incompatible materials: strong oxidising agents, strong acids

SECTION 11: Toxicological Information

- Low acute oral and dermal toxicity based on published data for phosphite antioxidants of this type
- Its hydrolysis product, 2,4-di-tert-butylphenol, has a distinct toxicological and ecotoxicological profile from the parent phosphite and is subject to its own regulatory review in some jurisdictions
- Not classified as carcinogenic, mutagenic, or toxic to reproduction based on available information for the parent compound

SECTION 12: Ecological Information

- The parent phosphite has low acute aquatic toxicity based on available data, but its hydrolysis product 2,4-di-tert-butylphenol shows greater aquatic toxicity relevance – avoid release of product or contaminated wash-water to waterways
- Keep dry during storage/handling to minimise hydrolysis and associated environmental release risk

SECTION 13: Disposal Considerations

- Dispose of product and packaging in accordance with local, state and national regulations
- Do not discharge to drains or waterways
- Not expected to require classification as hazardous waste under standard criteria for the parent compound; confirm local requirements before disposal

SECTION 14: Transport Information

UN Number	Not applicable – not classified as Dangerous Goods
Proper Shipping Name	Not regulated for transport (IMDG / ADR / IATA / RID)
Transport Hazard Class	Not classified
Packing Group	Not applicable
Environmental Hazards	Avoid release to aquatic environment given hydrolysis product relevance

SECTION 15: Regulatory Information

- Widely listed on major chemical inventories (TSCA, REACH, ECL, etc.) as an existing/registered substance

- Buyers/importers should confirm labelling and inventory requirements applicable to their specific jurisdiction and end-use, including any evolving restrictions specific to 2,4-di-tert-butylphenol as a degradation product

SECTION 16: Other Information

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This SDS has been compiled based on general industry data and knowledge for Antioxidant 168 products of this type as commercially supplied. It is intended as a general handling and safety guide and does not replace a batch-specific SDS from the manufacturing mill, which should be obtained and reviewed for each shipment where regulatory submission is required.

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