CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

Product name: ANTIOXIDANT AT-168

Issue date: 03-23-2017
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Version #: 17
SDS No: -

SECTION 1 Chemical product and company identification

Product name **ANTIOXIDANT AT-168**

Product Code N/A

Manufacturer/Supplier SI Group Fine Chemicals - Shanghai Co., Ltd.

Address No. 66 Hai Jin Road
Jinshan District, Shanghai 201512
China

Contact person Not available.

Telephone Not available.

e-mail sds.info@siigroup.com

Emergency telephone number

Emergency telephone [China]	(86) 0532 8388 9090
CHEMTREC UK (London):	+(44)-870-8200418
CHEMTREC International:	+1-703-741-5970

Recommended use and Limitations on use

Recommended use Industrial uses: Uses of preparations at industrial sites Industrial uses: Uses of substances as such or in preparations at industrial sites

Limitations on use For industrial use only.

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SECTION 2 Hazards identification

Emergency overview

May form combustible dust concentrations in air. May cause eye irritation May cause skin irritation. May cause irritation to the respiratory system. May affect mucous membranes May cause gastrointestinal disturbances. Prolonged exposure may cause chronic effects.

Hazard categories

Not classified.

Label elements

Pictograms None.

Signal word None.

Hazard statement The product does not meet the criteria for classification.

Precautionary statement

Prevention

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P308 + P313	IF exposed or concerned: Get medical advice/attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.

Storage

P401	Store in accordance with local regulations.

Disposal

P501	Dispose of contents/container in accordance with local regulation.

Physical and chemical hazards	Not available.
Health hazards	Not available.
Environmental hazards	Not available.
Supplemental information	May form combustible dust concentrations in air.

SECTION 3 Composition/information on ingredients

Substance/mixture Substance

Chemical name	Concentration (%)	CAS Number
TRIS (2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE	>99	31570-04-4

SECTION 4 First aid measures

Inhalation	Move to fresh air. For breathing difficulties, oxygen may be necessary. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not use mouth-to-mouth method if victim inhaled the substance. Get medical attention if symptoms occur.
Skin contact	Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Never give anything by mouth to a victim who is unconscious or is having convulsions. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and health effects	Exposure to powder or dusts may be irritating to eyes, nose and throat.
Expected acute symptoms and delayed symptoms	May cause irritation or burning to skin, respiratory system or eyes When in doubt or symptoms persist, seek medical attention
Personal protection for first-aid responders	Take off contaminated clothing and shoes immediately. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Notes to physician	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Provide general supportive measures and treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards	Fire may produce irritating, corrosive and/or toxic gases. Auto-ignition point - not known Not flammable but will support combustion
Special fire fighting procedures	Cool containers exposed to heat with water spray and remove container, if no risk is involved. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.
Protection of fire-fighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
General fire hazards	High concentration of airborne dust may form explosive mixture with air. Ensure that good housekeeping practices are followed as well as applicable guidelines such as the National Fire Protection Association [NFPA] 654, "Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids". The Minimum Ignition Energy for some organic solids as a dust may be as low as 3 mJ [millijoules]. The Minimum Explosive Concentration for some organic solids as a dust may be as low as 0.025 oz/ft3 or ~20 g/m3.
Specific methods	In the event of fire and/or explosion do not breathe fumes. Cool containers exposed to flames with water until well after the fire is out.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Remove all sources of ignition. Avoid inhalation of vapors and spray mists. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Follow facility/company's emergency plans.
For emergency responders	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep out of low areas. Avoid inhalation of vapors and spray mists. Wear appropriate protective equipment and clothing during clean-up. Remove all sources of ignition. Ventilate closed spaces before entering them.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Eliminate sources of ignition. Ventilate the contaminated area. Prevent spreading over a wide area (e.g. by containment or oil barriers). Prevent entry into waterways, sewer, basements or confined areas. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
Clean-up methods and materials and containment measures	Eliminate ignition sources including sources of electrical, static or frictional sparks. Ventilate the contaminated area. Avoid dust formation. Wear appropriate protective equipment and clothing during clean-up. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Clean surface thoroughly to remove residual contamination. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.
Prevention of secondary hazards	Do not allow product to enter sewer or waterways.

SECTION 7 Handling and storage

Handling	Use good personal hygiene practices Guard against dust accumulation of this material. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes. Avoid contact with skin. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. "Empty" containers retain product residue (liquid or vapor) and can be dangerous. Do not re-use empty containers.
Storage	Guard against dust accumulation of this material. Keep away from heat, sparks and open flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Use care in handling/storage.

SECTION 8 Exposure controls/personal protection

Exposure guidelines All PPE use is to be determined by a qualified person.

Exposure limits

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007)

Components	Type	Value	Form
DUST	PC-TWA	8 mg/m3	Total dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Monitoring methods Follow standard monitoring procedures.

Engineering measures	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. High concentration of airborne dust may form explosive mixture with air. Ensure that good housekeeping practices are followed as well as applicable guidelines such as the National Fire Protection Association [NFPA] 654, "Prevention of Fire and Dust Explosions from the Manufacturing., Processing, and Handling of Combustible Particulate Solids". Ventilation should be sufficient to effectively remove, and prevent buildup of, any vapors, dusts, or fumes that may be generated during handling or thermal processing. In order to ensure appropriate electrical safety practices are followed, consult applicable standards. These may include guidelines such as the National Fire Protection Association [NFPA] 70, "The National Electrical Code" and NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas ". NOTE: since this material's vapors, dust or fumes can form explosive mixtures in air, ensure that any potential areas where explosions may occur are designed to minimize potential damage. For recommendations to prevent such explosions and associated damage, consult applicable guidelines such as NFPA 69, "Standard on Explosion Prevention Systems" and/or NFPA 68, "Guide for Venting Deflagrations".
Personal protective equipment	
Respiratory protection	Do not breathe dust/fume/gas/mist/vapors/spray. In case of insufficient ventilation wear suitable respiratory equipment. Dust safety masks are recommended when the dust concentration is more than 10 mg/m3. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Hand protection	Chemical resistant gloves.
Eye protection	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear: Face-shield. Eye wash fountain is recommended.
Skin and body protection	Avoid contact with the skin. Wear suitable protective clothing. Wear impervious gloves for prolonged contact.
Hygiene measures	Avoid contact with eyes. Avoid contact with skin. Do not breathe dust. Wash hands after handling and before eating. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 Physical and chemical properties

Appearance	White, odorless powder.
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Odorless.
pH	Not available.
Melting point/freezing point	359.6 - 368.6 °F (182 - 187 °C)
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	494.6 °F (257.0 °C)
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg
Vapor density	>Air
Relative density	1 g/cm³
Density	Not available.
Solubility(ies)	
Solubility (water)	Not very soluble [<1%]
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.

Decomposition temperature	Not available.
Evaporation rate	<Ether
Other data	
Flash point class	Combustible IIIB
Molecular formula	C42H63O3P
Molecular weight	646.94 g/mol
Specific gravity	1

SECTION 10 Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Avoid dust close to ignition sources.
Incompatible materials	Incompatible with strong acids and bases.
Hazardous decomposition products	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

SECTION 11 Toxicological information

Acute toxicity May cause eye/skin irritation. May cause irritation of respiratory tract. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Components	Species	Test Results
TRIS (2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE (CAS 31570-04-4)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	> 6000 mg/kg

Routes of exposure	Eye contact. Skin contact. Ingestion. Inhalation.
Symptoms	Product dust may be irritating to eyes, skin and respiratory system.
Skin corrosion/irritation	May be irritating to the skin.
Serious eye damage/eye irritation	Dust or powder may irritate eye tissue.
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitizer	May cause sensitization by skin contact.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Toxic to reproduction	Not classified.
Specific target organ toxicity following single exposure	Not classified.
Specific target organ toxicity following repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	Prolonged exposure may cause chronic effects. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.
Other information	The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions.

SECTION 12 Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Ecotoxicological data

Components		Species	Test Results
TRIS (2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE (CAS 31570-04-4)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia	510 mg/l, 24 hours
Fish	LC0	Zebra fish (Brachydanio rerio)	> 100 mg/l, 96 hours

Persistence and degradability Not inherently biodegradable.

Bioaccumulation No data is available on the product itself.

Bioaccumulative potential

Octanol/water partition coefficient log Kow

TRIS (2,4-DI-TERT-BUTYLPHENYL) PHOSPHITE 18

Mobility in soil The product is essentially insoluble in water.

Other hazardous effects Not available.

SECTION 13 Disposal considerations

Residual waste Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

Local disposal regulations Dispose in accordance with all applicable regulations. Do not allow this material to drain into sewers/water supplies. Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

SECTION 14 Transport information

ROAD/RAIL

Packaging Type: BULK-- TANK TRUCK/TANK CAR
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: DRUM(s)/BAG(s)
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: INTERMEDIATE BULK CONTAINER
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: PAIL(s)/CAN(s)
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

AIR (ICAO/IATA)

Packaging Type: PAIL(s)/CAN(s)
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

VESSEL (IMDG)

Packaging Type: BULK-- TANK TRUCK/TANK CAR
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: DRUM(s)/BAG(s)
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: INTERMEDIATE BULK CONTAINER
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

Packaging Type: PAIL(s)/CAN(s)
Proper Shipping Name: CHEMICALS, N.O.I. - NOT REGULATED FOR TRANSPORT

General information Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR

SECTION 15 Regulatory information

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Not regulated.

Regulations on the Control over Safety of Dangerous Chemicals

Not regulated.

Measures for the Environmental Management Registration of Hazardous Chemicals (for Trial Implementation)

Not regulated.

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used

Regulations for Environmental Management On the First Import of Chemicals and the Import and Export of Toxic Chemicals

Provision on the Environmental Administration of New Chemical Substances

Other regulations

This safety data sheet was prepared in accordance with GB/T 16483-2008: Safety Data Sheet for Chemical Products - Content and Order of Sections. This safety data sheet conforms to the following laws, regulations and standards:
Regulations on the Control over Safety of Dangerous Chemicals
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used
Measures for the Safe Use of Chemicals in Workplaces
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009)
Packing Symbol of Dangerous Goods(GB190-2009)
Packing - Pictorial Marking for Handling of Goods (GB/T191-2009)

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

SECTION 16 Other information

References

ACGIH: American Conference of Industrial Hygienists.
ECHA: European Chemical Agency.
ERG: Emergency Response Guide
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
HSDB® - Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer - Monographs
NTP: National Toxicology Program - Report on Carcinogens
OSHA: Occupational Safety and Health Administration.
SI Group®: Test results
[Vendor]

List of abbreviations

ACGIH: American Conference of Governmental Industrial Hygienists.
ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des merchandises dangereuses par route).
ANSI: American National Standards Institute.
Maximum permissible concentration of biological working substances (BAT: Biologische Arbeitsstofftoleranzwerte).
BOD5: Biochemical oxygen demand within 5 days.
CEN: European Committee for Standardization (Comité Européen de Normalisation).
CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
CAS: Chemical Abstract Service.
DNEL: Derived No Effect Level.
EC50: Effective Concentration 50%.
EC: European Community.
ECHA: European Chemical Agency.
IATA -- International Air Transport AssociationICAO: International Civil Aviation Organization.
IMDG Code: International Maritime Dangerous Goods Code.
LC: Lethal Concentration.
LC50: Lethal Concentration 50%.
LD50: Lethal Dose 50%.
MAK: Threshold limit values Germany (Maximale Arbeitsplatzkonzentration - DFG).
N/A: Not available.
NY: New York State.
NIOSH: National Institute for Occupational Safety & Health.
NOEC: No observed effect concentration.
NOEL: No observed effect level.
NY: New York State.
OSHA: Occupational Safety & Health Administration.
PBT: Persistent, bioaccumulative, toxic.
PEL: Permissible Exposure Limit.
PNEC: Predicted No Effect Concentration.
PPE: Personal Protective Equipment.
RCRA: Resource Conservation Recovery Act.
SCBA: Self-contained breathing apparatus.
STEL: Short-term Exposure Limit.
TDG: Transport of Dangerous Goods.
TSCA: Toxic Substance Control Act.
TWA: Time Weighted Average.
USA: United States of America.
vPvB: very Persistent, very Bioaccumulative.

Further information

HMIS® is a registered trade and service mark of the ACA.

Disclaimer

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties.

The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer

Revision information

Composition / Information on Ingredients: Disclosure Overrides
HazReg Data: International Inventories