

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT

material safety data sheet

ANTIOXIDANT 1010

1. PRODUCT IDENTIFICATION

Trade Name: ANTIOXIDANT 1010

Formula: $C_{73}H_{108}O_{12}$

Intended Use: Antioxidant

HMIS RATING

Important Use Information:

This material is not intended for use in products for which prolonged contact with mucous membranes or abraded skin, body fluids, or abraded skin, or implantation within the human body, is specifically intended, unless the finished product has been tested in accordance with national and international applicable safety regulations. Because of the wide range of such potential uses, Network Performance Additives is not able to recommend this material as safe and effective for such uses and assumes no liability for such uses.

Health:	1
Flammability:	1
Reactivity:	0
Personal Protection:	X

2. COMPOSITION & INFORMATION ON INGREDIENTS

OSHA	CAS No.	Chemical Reactivity	Weight %
*	6683-19-8	Pentaerythritol Tetrakis (3,5-di-tert-butyl-4-hydroxyphenyl)propionate	100%

* = OSHA Compliant

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: White to off-white powder

Flammability: Use of proper grounding techniques are recommended when emptying this product from containers weight more than 1 pound. A build-up of Hazardous electrostatic charges may cause a flash fire or explosion when the contents are emptied into a flammable atmosphere. See Section 7.

Environmental: This product is of low toxicity to aquatic organisms.

Health: This product presents little or no immediate hazard to people if spilled or released.

Disposal: Sweep or shovel spilled material and place into a sealed container. Pre-wet the material to prevent dust build-up. Dispose in accordance with local, state and federal regulations. Incineration is recommended. This product is not a hazardous waste under RCRA.

Primary Route of Entry: Dermal, inhalation, ingestion

Eye: This product is not expected to cause eye irritation.

Skin: This product presents little or now immediate hazard to people if spilled or released.

Swallowing: Small amounts, if swallowed, are not expected to cause injury; avoid swallowing.

Inhalation: This product is considered to present little risk if inhaled. An Internal Exposure Limit (IEL) of 10 mg/m³ air (8-hour TWA) has been established.

Note: Refer to **Section 11, Toxicological Information** for details.

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4. FIRST AID MEASURES

- First Aid for Swallowing:** If swallowed, give at least 3-4 glasses of water, but DO NOT induce vomiting. Do not give anything by mouth to an unconscious or convulsing person.
- First Aid for Skin:** Following skin contact, wipe away excess material with a dry towel. Then wash affected areas with plenty of water and soap, if available, for several minutes. Get medical attention if irritation occurs.
- First Aid for Inhalation:** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops, or if breathing becomes difficult.
- First Aid for Eye:** Following eye contact, flush eyes with plenty of water for several minutes. Get medical attention if irritation occurs.
- Note to Physician:** None known.

5. FIRE FIGHTING MEASURES

- Flash Point:** 567°F (297°C)
- Extinguishing Media:** Carbon dioxide, dry chemical, foam, water mist
- Unusual Hazards:** The product can form an explosive dust/air mixture. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity.
- Fire Fighting Instructions:** Use self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Spill or Release Procedures:** Pre-wet material with water to avoid dust formation. Sweep or vacuum and place in sealable container for disposal. Wear protective equipment as specified below. Flush residue with water.

7. HANDLING AND STORAGE

- Handling:** Wash thoroughly after handling and before eating, drinking, or using tobacco products. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. For industrial use ONLY.
- Storage:** Keep container tightly closed when not in use and during transport.
- Explosion Hazards:**
- For All Packages:

DANGER~ EXPLOSION RISK

- Risk of explosion if an air-dust mixture forms
- Avoid creating dusty conditions
- Empty only into grounded containers

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- If container is larger than 550 US gallons (2m^3) in volume, or when flammable solvents are present, the container must be inverted (with inert gas flush) 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 liner, steel drums, steel pails or bulk bags, the following instructions apply:*
 - Always ground the package before emptying
- *For products that have external protective packaging, discharge product only from the primary product packaging, NOT from external containers or its liner.*

The user is responsible for designing a system that safely handles solid additives and to ensure proper training of employees in the system's use.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

- Engineering Controls:** Work in well-ventilated areas.
- General Protection:** Wear coveralls.
- Eye/Face Protection:** Wear safety glasses or chemical goggles to protect against dust particles.
- Skin Protection:** Wear appropriate protective gloves to prevent skin exposure to dust particles..
- Respiratory Protection:** In operations where dusts are generated, wear a NIOSH-approved dust respirator that has been selected by a technically qualified person for the specific work conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES:

- Appearance:** White to off-white powder
- Boiling Point:** Not Applicable
- Evaporation Rate:** Not Applicable
- Freezing/Melting Point:** 110 - 125°C [230 - 257°F]
- Decomposition Temperature:** > 350°C [>662°F]
- Specific Gravity:** ~ 1.1 - 1.2 [$\text{H}_2\text{O} = 1$]
- Vapor Density:** Not Applicable
- % Volatile:** < 0.5%
- Vapor Pressure:** ~ 1×10^{-12} mm HG at 20°C
- pH:** 5.89 for a 1% suspension in Water
- Solubility:** < 0.01wt% in water at 20°C (68°F)
- Octanol/Water Coefficient:** Log Po/w = 23
- Autoignition:** > 350°C (> 662°F) DIN 51794

10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable
- Incompatibility with other Materials:** Strong oxidizing agents, strong acids, strong bases
- Hazardous Decomposition Products:** Thermal decomposition and burning may produce carbon monoxide, carbon dioxide and other toxic compounds.
- Hazardous Polymerization:** Will not occur.

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11. TOXICOLIGICAL INFORMATION

Acute Oral Toxicity:	LD50 (Rats, Mice): > 5,000 mg/kg
Acute Dermal Toxicity:	LD50 (Rabbits): > 3,160 mg/kg
Acute Inhalation Toxicity:	LC50 (Rats): > 46 mg/l air for a 1-hour dust exposure. (Rats): Exposure for 4-hours to the fumes and vapors emitted when the product was heated to 316°C resulted in no deaths or untoward behavior reactions for an average nominal concentration of 0.11 mg/l air.
Intraperitoneal LD50:	(Rats): >1000 mg/kg
Skin Irritation:	(Rabbits) Not an irritant
Eye Irritation:	(Rabbits) Not an irritant
Sensitization:	(Guinea pigs) No sensitization observed in optimization test. RIPT (Humans): Not a primary irritant and no evidence of sensitization under the conditions of the study, which involved testing of a 0.5% w/v solution in dimethyl-phthalate.
Mutagenicity:	Ames test: Non-mutagenic Nucleus anomaly test (Chinese hamsters): Non-mutagenic Chromosome studies in somatic cells (Chinese hamsters): Non-mutagenic Dominant lethal study (Mice): Non-mutagenic
Teratogenicity/Reproductive Toxicity:	The test substance was administered orally to pregnant rats from day 6 to 15 of pregnancy. The doses were 150, 500 and 1,000 mg/kg of bodyweight. Embryonic development was not affected by the treatment. No teratogenic effects were observed under the conditions of the experiment. The test substance was administered daily by gavage to pregnant mice from day 6 until day 15 of pregnancy at doses of 150, 500 and 1,000 mg/kg. The high-dose young showed a slight delay in physiological growth which was indicated by an increase in the number of incompletely ossified sternebrae. No teratogenic effects were seen in this study. The test substance was added to the diet of Charles River rats at levels of 0, 1000, 3,000 and 10,000 ppm throughout two generations. No death occurred amongst adult animals of either the F0 or F1 generation nor were there any consistent effects which could be attributed to the treatment. There were no adverse effects on litters of treated parents in either generation. The findings of this study indicate that, under the conditions of the test, the treated animals showed no substantial differences from their control counterparts and that their reproductive capacity was not impaired.
Subchronic Toxicity:	The test substance was administered by incorporation into the diet to albino rats at concentrations of 0, 2,000, 10,000 and 50,000 ppm for 90 days. No significant abnormalities were seen among parameters such as growth, food consumption, mortality, behavioral patterns, hematology, clinical blood chemistry, urinalysis, organ weight data and gross and microscopic pathology. The no-observable effect level (NOEL) was 50,000 ppm, equivalent to 2,500 mg/kg/day. The test substance was administered by incorporation into the diet to groups of beagle dogs at concentrations of 0, 1,000 and 10,000 ppm for 3 months. There

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Chronic Toxicity/Carcinogenicity:

were no deaths during the study. Growth rates and food consumption were within normal limits in all groups. There were no relevant changes in the laboratory parameters (hematology, clinical chemistry and urine analysis) and no treatment related changes were seen at autopsy or on histo-pathological examination. The NOEL was 10,000 ppm, corresponding to an average intake of 322 mg/kg/day. The test substance was administered by incorporation into the diet to rats at concentrations of 0, 1,000, 3,000 and 10,000 ppm for 104 weeks. Not treatment related changes were seen in any of the measured endpoints, including tumor formation. The NOEL was 10,000 ppm, equivalent to approximately 116 mg/kg/day.

The test substance was administered by incorporation into the diet to mice at concentrations of 0, 100, 300 and 1,000 ppm for 24 months. No treatment related changes were seen in any of the measured endpoints, including tumor formation. The NOEL was 1,000 ppm, equivalent to approximately 116 mg/kg/day.

Absorption/Distribution/Excretion Metabolism:

Radioactive test substance was administered by gavage to one male and one female rat. Animals had been preconditioned with the test substance at a 2% dietary level for 6 weeks. The greatest amount of radioactivity recovered was in the feces.

12. ECOLOGICAL INFORMATION

Acute Toxicity to Fish:	Zebra Fish, 96-hour, LC50: >100 ppm
Acute Toxicity to Invertebrates:	Daphnia magna, 24-hour, EC50: >86 ppm
Acute Toxicity to Algae:	Green algae, 0-72 hour, EC50: > 100 ppm
Toxicity to Sewage Bacteria:	Inhibitory concentration on respiration of aerobic wastewater bacteria: IC20, IC50, IC80: >100 ppm
Chemical Oxygen Demand:	1.79 and 2.38 g COD/g (2 studies)
Biodegradability:	Aerobic Sewage OECD Coupled Units Test No. 303A: Average elimination measured by specific analysis was 45.2% of the initially measured concentration.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations: Incinerate in a chemical incinerator equipped with an after-burner and scrubber. Follow all federal, state and local regulations.

14. TRANSPORT INFORMATION

This product is not regulated by any means of transport.

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15. REGULATORY INFORMATION:

Chemical Weapons Convention (CWC):

This product does not contain any chemicals listed under the Chemical Weapons Convention Schedule of Chemicals.

US Federal Regulations:

Clean Air Act – Hazardous Air Pollutants (HAP):

This product contains no hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act.

Clear Air Act – Ozone Depleting Substances (ODS):

This product does NOT contain nor was manufactured with any Class I or Class II ozone depleting substances (ODS). This is based upon existing knowledge from our current supplier base.

Clean Water Act – Priority Pollutants (PP):

This product contains no chemicals listed under the U.S. Clean Water Act Priority Pollutant List.

FDA: Food Packaging Status:

This product has been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive. Call for further detailed information.

Occupational Safety and Health Act (OSHA):

This product is considered to be a hazardous chemical under the OSHA Hazard Communication Standard (29CFR 1910.1200). Its hazards are: Fire and the sudden release of pressure (explosion) hazard.

Resource Conservation and Recovery Act (RCRA):

This product is considered not to be a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 302 – Extremely Hazardous Substances (EHS):

This product contains no chemicals regulated under Section 302 as extremely hazardous substances.

SARA Title III: Section 311/312 – Hazard Communication Standard (HCS):

This product is regulated under Section 311-312 (40 CFR 370).

SARA Title III: Section 313 Toxic Chemical List (TCL):

This product does not contain a toxic chemical for routine annual Toxic Chemical Release Reporting' under Section 313 (40 CFR 372).

TSCA Section 5(e) – Consent Order / SNUR:

This product is not subject to a section 5(e) Consent Order or Significant New Use Rule (SNUR).

TSCA Section 8(b) – Inventory Status:

All Chemical(s) comprising this product are listed on the TSCA inventory.

TSCA Section 12(b) – Export Notification:

This product does not contain any chemicals subject to Section 12(b) export notification.

International Regulations:

Australian Inventory Status:

This product contains only chemicals that are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status:

This product contains only chemical that are currently listed on the Canadian Domestic Substance List (DSL).

European Inventory Status (EINECS):

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This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Korean Inventory Status:

This product contains only chemicals that are currently listed on the Korean Chemical Substances List.

Japanese Inventory Status:

This product contains only chemicals currently listed on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

Additional International Information:

This product contains only chemical that are currently listed on the Philippine Inventory of Chemical Substances.

State Regulations:

California Proposition 65:

This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Massachusetts Right-to-Know:

This product does not contain any chemicals that are subject to Massachusetts Right-to-Know disclosure requirement.

New Jersey Right-to-Know:

The following is required composition information:

<i>Chemical Name:</i>	Tetrakis[methylene(3,5-di-(tert)-butyl-4-hydroxyhydrocinnamate)]methane
<i>Common Name:</i>	ELC 1010
<i>CASRN:</i>	6683-19-8
<i>Chemical Name:</i>	Pentaerythritol tris ester with 3-(3,5-di-(tert)-butyl-4 hydroxyhydrocinnamate)]methane
<i>Common Name:</i>	Trisub
<i>CASRN:</i>	84633-54-5

Pennsylvania Right-to-Know:

The following is required composition information:

<i>Chemical Name:</i>	Tetrakis[methylene(3,5-di-(tert)-butyl-4-hydroxyhydrocinnamate)]methane
<i>Common Name:</i>	ELC 1010
<i>CASRN:</i>	6683-19-8
<i>Chemical Name:</i>	Pentaerythritol tris ester with 3-(3,5-di-(tert)-butyl-4-hydroxyhydrocinnamate)]methane
<i>Common Name:</i>	Trisub
<i>CASRN:</i>	84633-54-5

16. OTHER INFORMATION

Disclaimer: The information and recommendations contained herein are based upon data believed to be correct. However, NO guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein.

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Information Contact: For technical information contact your technical sales representative. For additional health / safety / regulatory information, contact Product Safety at (330)773-2700.

Label Text: EC Labeling Symbol = None; R53, S61