TIANJIN NORTH JINHENG CHEMICAL AND INDUSTRY PLANT	material safety data sheet
	ANTIOXIDANT 1024

1. PRODUCT IDENTIFICATION

Trade Name: ANTIOXIDANT 1024

Formula: $C_{34}H_{52}N_2O_4$

Intended Use: Antioxidant, Metal Deactivator

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

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.

2. COMPOSITION & INFORMATION ON INGREDIENTS

OSHA	CAS No.	Chemical Description	Weight %
*	32687-78-8	2',3-bis[[3-[3.5-di-tert-butyl-4-hyrdoxyphenyl]propionyl]]propionohydrazide	98 – 100 wt

*** = OSHA Non-Hazardous Ingredient**

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: White to slightly yellow cryatalline powder
Odor: Odorless
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 moderately toxic to aquatic organisms. Prevent spillage or leakage into a body of water.
Health: This product has no known adverse effect on human health.
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 (40 CFR 261.21).
Primary Route of Entry: Dermal, inhalation, ingestion, eyes

4. FIRST AID MEASURES

First Aid for Swallowing: DO NOT induce vomiting. If vomiting occurs naturally, have individual lean forward to reduce risk of aspiration. Do not give anything by mouth to an unconscious or convulsing person. Seek medical attention immediately.

First Aid for Skin: Wash off affected areas with plenty of water and soap. 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 give oxygen. If not breathing, give artificial respiration and seek immediate medical attention.

First Aid for Eye: In case of contact with eyes, flush eyes with plenty of water.Seek Medical advise.

Note to Physician: None known.

5. FIRE FIGHTING MEASURES

Flash Point: > 180°C (Marcusson open cup)

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: Standard procedure for chemical fires. Use self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill or Release Procedures: Sweep up or vacuum and place in suitable containers for disposal. Avoid dust formation. 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. Store in cool, well-ventilated place.

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

- 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 advise.
- *In addition, for products packaged in fused-lined (coated) fiber drums, fiber drums with conductive liner, steel drums, steel pails and Type "C" FIBC (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

Exposure Guidelines:	There are no OSHA or ACGIH exposure guidelines available for component(s) in this product.
Engineering Controls:	Work in well-ventilated areas. Do NOT breathe dust.
General Protection:	Wear coveralls.
Eye/Face Protection:	Wear safety glasses or chemical goggles to protect against dust particles.
Skin Protection:	Wear appropriate protective gloves and protective clothing 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:

Physical Form:	Solid
Appearance:	White to off-white powder
Odor:	Odorless
Boiling Point:	Not Applicable
Evaporation Rate:	Not Applicable
Freezing/Melting Point:	227 - 232°C [441 - 450°F]
Decomposition Temperature:	> 350°C [>662°F]
Specific Gravity:	~ 1.1 [H_2O = 1]
Vapor Density:	Not Applicable
% Volatile:	< 0.5%
Vapor Pressure:	~ 8 x 10^{-13} mm HG at 20°C
pH:	6 (suspension in Water)
Solubility:	< 1 mg/L in water at 20°C (68°F)
Octanol/Water Coefficient:	Log Po/w >> 6
Autoignition:	> 380°C (> 716°F) BAM (fluidized dust method)
Flammability Limits in Air:	
Upper	not determined
Lower	not determined
Flash Point:	> 180°C (356°F)
Test Method (for flash point)	Marcusson (open pan)

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to Avoid: Avoid static discharge
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. No Decomposition expected under normal storage conditions.
Possibility of Hazardous Reactions: None expected

11. TOXICOLIGICAL INFORMATION

Acute Oral Toxicity: LD50 (Rats, Mice): > 7,000 mg/kg
Acute Dermal Toxicity: LD50 (Rabbits): > 3,000 mg/kg
Acute Inhalation Toxicity: (Rats): For a 4 hour dust exposure to fumes/vapors emitted when sample was heated to 288°C (average particulate concentration of 0.11 mg/L air) resulted in no deaths; moderated lung hyperemia in 50% of animals upon gross autopsy after 14 days of observation.
Skin Irritation: (Rabbits) Not an irritant
Eye Irritation: (Rabbits) Not an irritant
Skin Sensitization: (Guinea pigs): Non-sensitizer in the maximization test.
RIPT (Humans): Not a primary irritant and no evidence of sensitization in 50 subjects patched with the neat compound.
Mutagenicity: Ames test: Non-mutagenic Nucleus anomaly test, Chinese hamster: Non-mutagenic.
Teratogenicity: Not determined
Reproductive Toxicity: (Rats) Pregnant rats were administered doses of 0, 500, 1,500 and 3,000 mg/kg orally from day 6 until day 15 of pregnancy, inclusive. No embryotoxic or teratogenic effects were seen.
Carcinogenicity: None of the components in this product at concentrations greater than 0.1% are listed by **(IARP; NTP; OSHA; ACGIH)** IARP, OSHA or ACGIH as a carcinogen.
Teratogenicity: Not determined
Neurotoxicity: Not determined
Subacute Toxicity: Not determined
Subchronic Toxicity: Rats were administered 0, 400, 2,000 or 10,000 ppm in the diet for 3 months. Minimal liver changes were seen in males at the two highest doses. The no observable level (NOEL) was 400 ppm (approximately 26 mg/kg/day).
Chronic Toxicity: Not determined
Absorption/Distribution/ Not determined
Additional Information: Not determined

12. ECOLOGICAL INFORMATION

Acute Toxicity to Fish: (Bluegill)(Trout)(Carp)(Golden orfe) 96-hour, LC50: >100ppm
Acute Toxicity to Invertebrates: (Daphnia magna) 24-hour, EC50: 15ppm
Acute Toxicity to Algae: **(**Green algae) 72 hour, EC50: > 19.8ppm
Toxicity to Sewage Bacteria: Inhibitory concentration on respiration of aerobic wastewater bacteria: IC20, IC50, IC80: >100ppm
Activated Sludge Respiration: Not determined
Biochemical Oxygen Demand (BOD): Not determined
Chemical Oxygen Demand (COD): Not determined
Total Oxygen Demand (TOD): Not determined
Biodegradability: Aerobic Sewage OECD Coupled Units Test No. 303A: Biological elimination of 41.6%; whether this results implies primary elimination only or mineralization also cannot be answered with certainty. If the DOC values of blank and test unit are compared, it appears that ~50% of the product was mineralized which would mean inherent biodegradability.
Modified Sturm Test: Not biodegradable

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

U.S. Department of Transportation (DOT): Not regulated for this mode of transport.
International Maritime Dangerous Goods (IMDG): Not regulated for this mode of transport.
International Air Transportation Authority (IATA): Not regulated for this mode of transport.

15. REGULATORY INFORMATION:

OSHA Hazardous Substance: This material is classified as not hazardous under OSHA regulations.

US Federal Regulations:

Clean Air Act – Hazardous Air Pollutants (HAP):

This product contains the following Hazardous Air Pollutants (HAP), as defined by the U.S. Clean Air Act:

Components	CAS #	CAA Section 112 Statutory Hazardous Air Pollutants
Hydrazine	302-01-2	Listed

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) as defined by the U.S. Clear Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B).

Clean Air Act – Volatile Organic Compounds (VOC):

This product does not contain any SOCMI Intermediate or Final Volatile Organic Compounds (VOC) as defined by the U.S. Clean Air Act Section 111 (40 CFR 60.489).

Clean Water Act – Priority Pollutants (PP):

This product does not contain any priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).

Resource Conservation and Recovery Act (RCRA):

This product is not a hazardous waste under RCRA (40 CFR 261.21).

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 to be a hazardous waste under RCRA (40 CFR 261).

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

This product contains the following component(s) regulated under Section 302 as Extremely Hazardous Substances:

Components	CAS #	Section 302 Extremely Hazardous Substances
Hydrazine (0 – 0.001%)	302-01-2	Listed

SARA Section 304 CERCLA Hazardous Substances:

This product contains the following component(s) regulated under Section 304 (40 CFR 302) as hazardous chemical for emergency release notification ("CERCLA" List):

Section 304 CERCLA Components	CERCLA CAS #	Hazardous Substances	Reportable Quantity
Hydrazine (0 – 0.001%)	302-01-2	Listed	Listed

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 any components under the Section 313 Toxic Chemical List.

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 5(f):

This product is not subject to a Section 5(f)6(a) rule.

TSCA Section 8(b) – Inventory Status:

All compounds(s) comprising this product are either exempt or listed on the TSCA inventory.

TSCA Section 12(b) – Export Notification:

This product does not contain any component(s) that are subject to a Section 12(b) Export Notification.

International Regulations:

Chemical Weapons Convention (CWC):

This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule of Chemicals.

Domestic Substance List (DSL) Status:

All components are listed on the DSL.

State Regulations:

California Proposition 65:

This product contains the following component(s) currently on the California list of Known Carcinogens and Reproductive Toxins:

Substances Reportable Quantity

Components	CAS #	California Proposition 65
Hydrazine (0 – 0.001%)	302-01-2	carcinogenic

Pennsylvania Right-to-Know:

This product does not contain any component(s) currently on the Pennsylvania Right-To-Know list of hazardous chemicals.

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.

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