



# Material Safety Data Sheet

OSHA / ANSI 2003 Compliant

MSDS date: 21-Jan-2004

**NFPA Rating:** Health: 1      Flammability: 1      Instability: 0      **Special Hazards:** None known.  
**HMIS Rating:** Health: 1      Flammability: 1      **Physical Hazard:** 0      **Personal Protection:** X

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Irganox 1010

**Product Number:** 0304865

**Intended Use:** Antioxidant

**Manufacturer/Supplier:** Ciba Specialty Chemicals Corporation  
540 White Plains Road  
Tarrytown, NY 10591  
8:30am - 5pm Phone Number: 1-914-785-2000  
MSDS Request Line (voicemail): 1-800-431-2360  
Customer Service/Product Information 1-800-474-4731

**Emergency 24-Hour Health/Environmental Phone: 1-800-873-1138**

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**Signal Word:** NOTICE!  
**Physical Form:** Solid  
**Color:** White to Off-white  
**Odor:** None  
**Health:** This product has no known adverse effect on human health.  
**Physical Hazards:** Refer to MSDS Section 7 for Dust Explosion information.  
**Environmental:** Low toxicity to aquatic organisms.

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

**Primary Route(s) of Entry:** Ingestion, Skin, Inhalation, Eyes.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**NON-HAZARDOUS COMPONENTS**

Components	CAS Number	Weight %
Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, 2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]methyl]-1,3-propanediyl ester	6683-19-8	96 - 99

**4. FIRST AID MEASURES**

<b>Eyes:</b>	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
<b>Skin:</b>	Wash off immediately with soap and plenty of water. Get medical attention if irritation occurs.
<b>Inhalation:</b>	Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.
<b>Ingestion:</b>	Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Seek medical attention immediately.
<b>Notes to physician:</b>	None known.

**5. FIRE FIGHTING MEASURES**

<b>Fire Fighting Measures:</b>	Standard procedure for chemical fires.
<b>Suitable Extinguishing Media:</b>	Carbon dioxide, dry chemical, foam or water mist.
<b>Fire Fighting Equipment:</b>	Wear self-contained breathing apparatus and protective suit.
<b>Unusual hazards:</b>	The product can form an explosive dust/air mixture. For further information, see Section 7 Explosion Hazards.
<b>Hazardous Combustion Products:</b>	Burning may produce toxic combustion products.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Cleanup Instructions:</b>	Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Wear suitable protective equipment. Should not be released into the environment.
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**7. HANDLING AND STORAGE**

<b>Handling:</b>	As with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin, and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation.
<b>Storage:</b>	Keep containers tightly closed in a cool, well-ventilated place.

**Explosion Hazards:**

- Combustible powder.
- Avoid creating dusty conditions.
- Grounding is required when emptying into a conductive container.
- When flammable solvents are present, the container must be inerted 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 liners, steel drums, steel pails, and Type "C" FIBC (bulk bags), or other conductive the following instructions also apply:

- Always ground this package before emptying.

The user is responsible for designing the system to handle solid and ensuring proper training of employees in the system's use.

**For Industrial Use Only****8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Guidelines:**

There are no OSHA or ACGIH exposure guidelines available for component(s) in this product.

**Ciba IEL for Product:** 10 mg/m<sup>3</sup> air (8 hour TWA)

**Personal Protective Equipment**

**Eye/Face Protection:** Wear safety glasses or goggles to protect against dust particles.

**Skin Protection:** Wear chemical resistant gloves and protective clothing.

**Respiratory Protection:** Use NIOSH approved respirator as needed to mitigate exposure.

**Engineering Controls:** Work in well ventilated areas. Do not breathe dust.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical Form:</b>	Solid
<b>Color:</b>	White to Off-white
<b>Odor:</b>	None
<b>Boiling Point:</b>	Not applicable
<b>Freezing/Melting Point:</b>	110 - 125°C (230 - 257°F)
<b>Solubility in water:</b>	< 0.1 ppm @ 20 °C
<b>Vapor Density:</b>	Not applicable
<b>Vapor Pressure:</b>	~ 1 x 10 <sup>-12</sup> mmHg @ 20°C (68°F)
<b>Density:</b>	Not determined
<b>Specific Gravity:</b>	1.1 - 1.2 (Water = 1)
<b>pH:</b>	5.89 @ 500 g/l (suspension)
<b>Percent Volatile:</b>	< 0.5
<b>VOC:</b>	< 0.5 %
<b>Partition Coefficient (Octanol/Water):</b>	23 log Pow
<b>Autoignition Temperature:</b>	> 350°C (662°F)
<b>Decomposition Temperature:</b>	> 350°C (662 °F)
<b>Ignition Temperature:</b>	410°C (770°F) BAM (fluidized dust method)
<b>Flammability Limits in Air:</b>	
<b>Flash point:</b>	297°C (567°F)

Test Method (for Flash Point):

Open cup

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable.
<b>Conditions to Avoid:</b>	Avoid static discharge.
<b>Incompatibility:</b>	Strong oxidizing agents, strong acids, strong bases.
<b>Hazardous Decomposition Products:</b>	No decomposition expected under normal storage conditions.
<b>Possibility of Hazardous Reactions:</b>	None expected.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Oral Toxicity:</b>	LD50 > 5000 mg/kg (Rats) (Mice)
<b>Acute Dermal Toxicity:</b>	LD50 >3160 mg/kg (Rabbits)
<b>Acute Inhalation Toxicity:</b>	> 46 mg/L LC50 1 Hr (Rats) Exposure for 4-hours to the fumes and vapors emitted when product was heated to 316 C resulted in no deaths or untoward behavioral reactions for an average nominal concentration of 0.11 mg/L air.
<b>Eye Irritation:</b>	(Rabbits) Not an irritant
<b>Skin Irritation:</b>	(Rabbits) Not an irritant
<b>Skin Sensitization:</b>	(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.
<b>Carcinogenicity (IARC; NTP; OSHA; ACGIH):</b>	None of the components in this product at concentrations greater than 0.1% are listed by IARC; NTP, OSHA or ACGIH as a carcinogen.
<b>Carcinogenicity Studies:</b>	(Rats): Rats were fed diets containing up to 10,000 ppm for 2 years. The only effects seen amongst the parameters measured to evaluate general health, clinical chemistry, pathology or tumor incidence was reduced body and relative liver weights in the high dose females. The NOEL was 5,000 ppm. (Mouse): Mice were fed diets containing up to 5,000 ppm for 2 years. No treatment related effects were seen in any of the parameters measured to evaluate general health, clinical chemistry, pathology or tumor incidence. The NOEL was 5,000 ppm. (Dogs): Beagle dogs were fed diets containing up to 10,000 ppm for 2 years. No treatment related effects were seen in any of the parameters measured to evaluate general health, clinical chemistry or pathology. The NOEL was 10,000 ppm.
<b>Mutagenicity:</b>	Ames test: Non-mutagenic Dominant Lethal, mice: Non-mutagenic Nucleus Anamoly test, Chinese Hamster: Non-mutagenic Chromosome Studies in Somatic Cells, Chinese Hamster: Non-mutagenic

<b>Reproductive Toxicity:</b>	Rats NOEL = 10 000 ppm, in diet, for all endpoints over two generations of parents, litters, and offspring.
<b>Teratogenicity:</b>	No evidence of teratogenic or embryotoxic effects when pregnant rats and mice were dosed at levels up to and including 1000 mg/kg by gavage from day 6 through 15 of pregnancy.
<b>Neurotoxicity:</b>	Not determined
<b>Subacute Toxicity:</b>	Not determined
<b>Subchronic Toxicity:</b>	<p>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.</p> <p>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 were no deaths during the study. Growth rates and food consumption were within normal limits in all groups. There were no relevant changes in laboratory parameters (hematology, clinical chemistry and urinalysis) and no treatment related changes were seen at autopsy or on histopathological examination. The NOEL was 10,000 ppm, corresponding to an average intake of 322 mg/kg/day.</p>
<b>Chronic toxicity:</b>	<p>The test substance was administered by incorporation into the diet to rats at concentrations of 0, 1000, 3000, 10000 ppm for 104 weeks. No treatment-related changes were seen in any of the measured endpoints, including tumor formation. The NOEL was 10000 ppm (approx. 496 mg/kg/day). The test substance was administered by incorporation into the diet to mice at concentrations of 0, 100, 300 and 1000 ppm for 24 months. No treatment-related changes were seen in any of the measured endpoints, including tumor formation. The NOEL was 1000 ppm ( approx. 116 mg/kg/day).</p>
<b>Absorption / Distribution / Excretion / Metabolism:</b>	Not determined
<b>Additional Information:</b>	(Rats-Uterotrophic Assay): No evidence of a uterotrophic response for 3 consecutive days at dose levels of up to 1000 mg/kg/day

## 12. ECOLOGICAL INFORMATION

<b>Toxicity to Fish:</b>	LC50: > 100 ppm (Zebra fish)
<b>Toxicity to Invertebrates:</b>	EC50: > 86 ppm 24 hour (Daphnia magna)
<b>Toxicity to Algae:</b>	> 100 ppm EC50 72 hour (Green algae)
<b>Toxicity to Sewage Bacteria:</b>	Inhibitory concentration on respiration of aerobic waste water bacteria: IC20, IC50, IC80 >100 ppm
<b>Activated Sludge Respiration Inhibition Test:</b>	Not determined

**Biochemical Oxygen Demand (BOD):** Not determined

**Chemical Oxygen Demand (COD):** 1.79 and 2.38 g COD/g (2 studies)

**Total Oxygen Demand (TOD):** Not determined

**Biodegradability:** Aerobic Sewage OECD Coupled Units Test No. 303A: Average elimination measured by specific analysis was 45.2% of the initially measured concentration.

**Bioaccumulation:** Not determined

**Additional Environmental Data:** Not determined

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal:** Dispose in accordance with local, state, provincial and federal 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

### Federal Regulations

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

**Clean Air Act - Hazardous Air Pollutants (HAP):** This product does not contain any Hazardous Air Pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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

**Clean Air Act - Ozone Depleting Substances (ODS):** This product neither contains, nor was manufactured with, a Class I or Class II ozone depleting substance (ODS), as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B).

**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):** Not a hazardous waste under RCRA (40 CFR 261.21).

**SARA Section 302 Extremely Hazardous Substances (EHS):** This product does not contain any components regulated under Section 302 (40 CFR 355) as Extremely Hazardous Substances.

**SARA Section 304 CERCLA Hazardous Substances:** This product does not contain any components regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

**SARA Section 311/312 Hazard Communication Standard (HCS):** This product is not regulated under Section 311/312 HCS (40 CFR 370).

**SARA Section 313 Toxic Chemical List (TCL):** This product does not contain any component(s) listed on the Section 313 Toxic Chemical List.

**TSCA Section 8(b) Inventory Status:** All component(s) comprising this product are either exempt or listed on the TSCA inventory.

**TSCA Section 5(e) Consent Orders:** This product is not subject to a Section 5(e) Consent Order.

**TSCA Significant New Use Rule (SNUR):** This product is not subject to a Significant New Use Rule (SNUR).

**TSCA Section 5(f):** This product is not subject to a Section 5(f)/6(a) rule.

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

### **State Regulations**

**California Proposition 65:** This product does not contain any components currently on the California list of Known Carcinogens and Reproductive Toxins.

**Pennsylvania Right-To-Know:** This product does not contain any components currently on the Pennsylvania Right-To-Know list of hazardous chemicals.

### **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.

## **16. OTHER INFORMATION**

**Disclaimer:** The information contained herein is based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to such data or information. The user is responsible for determining whether the product is suitable for its intended conditions of use.