



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name *tert*-Butylhydroquinone, 97%
Product Number 112941
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052

Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
T-BUTYLHYDROQUINONE	1948-33-0	No	217-752-2	

Formula C10H14O2
Synonyms Banox 20BA, 1,4-Benzenediol, 2-(1,1-dimethylethyl)- (9CI), *tert*-Butyl-1,4-benzenediol, *tert*-Butylhydroquinone, 2-(1,1-Dimethylethyl)-1,4-benzenediol, Mono-*tertiary*butylhydroquinone, MTBHQ, Sustane, TBHQ, Tenox TBHQ

Section 3 - Hazards Identification

Emergency Overview

Harmful.
Harmful if swallowed. Irritating to eyes, respiratory system and skin.

HMS Rating
Health: 1 Flammability: 0 Reactivity: 0

NFPA Rating
Health: 1 Flammability: 0 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point: 339.8 °F 171 °C

Autoignition Temp: 457 °C

Extinguishing Media

Suitable
Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed In Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure
Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable
Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.

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General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Color	Form
	Faintly brown	Powder
Molecular Weight:	166.22 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	125 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	339.8 °F	Method: closed cup
Flash Point °C	171 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	457 °C	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable
Stable.
Materials to Avoid
Strong oxidizing agents, Strong bases.

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.
Skin Absorption
May be harmful if absorbed through the skin.
Eye Contact
Causes eye irritation.
Inhalation
May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion
Harmful if swallowed.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: MX4375000

Toxicity Data

Oral - Rat: 700 mg/kg (LD50)
Intraperitoneal - Rat: 300 MG/KG (LD50)
Oral - Mouse: 1000 mg/kg (LD50)
Intraperitoneal - Mouse: 144 MG/KG (LD50)
Remarks: Behavioral:Tremor.
Behavioral:Muscle weakness.
Oral - Guinea pig: 790 mg/kg (LD50)

NTP Carcinogen List

<u>Rating</u>	<u>Species</u>	<u>Route</u>
No evidence.	Mouse/rat	Feed

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Route</u>	<u>Exposure Time</u>	<u>Mutation test</u>
Rat	33600 MG/KG	Oral	4W	Unscheduled DNA synthesis
Mouse	200 MG/KG	Intraperitoneal		Cytogenetic analysis
Mouse	20 MG/KG	Intraperitoneal		Sister chromatid exchange
Hamster	170 UG/L (+S9)		lung	Mutation in microorganisms
Hamster	20 MG/L		lung	Cytogenetic analysis
Hamster	170 UG/L		lung	Sister chromatid exchange
Hamster	1700 UG/L		lung	Mutation in mammalian somatic cells.

Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	32500 MG/KG	Oral	(13W PRE)
	Result: Maternal Effects: Other effects. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).		
Mouse	39 GM/KG	Oral	(13W MALE)
	Result: Paternal Effects: Testes, epididymis, sperm duct.		
Mouse	39 GM/KG	Oral	(13W MALE)
	Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles).		

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.

UN#: 3077

Class: 9

Packing Group: Packing Group III

Hazard Label: Class 9

PIH: Not PIH

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements R: 22 36/37/38

Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Safety Statements S: 26 36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger

Harmful.

Risk Statements

Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for

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