



SAFETY DATA SHEET
TERTIARY BUTYL HYDROQUINONE
REVISION 3, DATE 23 AUG 22

1. IDENTIFICATION

Product Name	Tertiary Butyl Hydroquinone
Other Names	TBHQ; t-Butyl hydroquinone; tert-butylhydroquinone
Uses	Food additive (E319).
Chemical Family	No Data Available
Chemical Formula	C ₁₀ H ₁₄ O ₂
Chemical Name	1,4-Benzenediol, 2-(1,1-dimethylethyl)-
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled

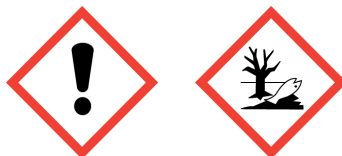


Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Acute Toxicity (Oral) - Category 4
 Acute Toxicity (Dermal) - Category 4
 Skin Corrosion/Irritation - Category 2
 Serious Eye Damage/Irritation - Category 2A
 Sensitisation (Skin) - Category 1
 Acute Hazard To The Aquatic Environment - Category 1
 Long-term Hazard To The Aquatic Environment - Category 1

Pictograms

Signal Word Warning

Hazard Statements		H302 + H312	Harmful if swallowed or in contact with skin.
		H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H319	Causes serious eye irritation.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary Statements	Prevention	P280	Wear protective gloves/protective clothing/eye protection/face protection.
		P273	Avoid release to the environment.
		P270	Do not eat, drink or smoke when using this product.
		P272	Contaminated work clothing should not be allowed out of the workplace.
	Response	P312	Call a POISON CENTER or doctor if you feel unwell.
		P337 + P313	If eye irritation persists: Get medical advice.
		P391	Collect spillage.
		P330	Rinse mouth.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P362 + P364	Take off contaminated clothing and wash it before reuse.
		P333 + P313	If skin irritation or rash occurs: Get medical advice.
	Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.3A	Substances that are irritating to the skin
		6.4A	Substances that are irritating to the eye
		6.5B	Substances that are contact sensitisers
	Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Chemical Entity	Formula	CAS Number	Proportion
t-Butyl hydroquinone	C10H14O2	1948-33-0	>=99 - 100 %

4. FIRST AID MEASURES**Description of necessary measures according to routes of exposure**

Swallowed	IF SWALLOWED: Rinse mouth with water. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention. *Protect uninjured eye!
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. Call a Poison Centre or doctor/physician for advice. If skin irritation or rash occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	May cause an allergic skin reaction.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.
Flammability Conditions	The product is combustible.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Do not scatter spilled material with high-pressure water streams.
Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic fumes, including oxides of Carbon.
Special Fire Fighting Instructions	Collect contaminated fire extinguishing water separately; This must not be discharged into drains.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	171 °C [Closed cup]
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	510 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes and skin.
Clean Up Procedures	Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers for disposal (see SECTION 13). *Use non-sparking tools.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Wash with plenty of water. Retain contaminated washing water and dispose it.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Remove persons to safety. Keep unauthorised personnel away. Stay upwind and/or uphill.
Personal Precautionary Measures	Wear personal protection equipment (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dusts or mists and contact with eyes and skin. Do not ingest. Use personal protective equipment as required (see SECTION 8). WARNING: May form combustible dust concentrations in air! Keep away from heat and sources of ignition - No smoking. Take precautionary measures against static discharges.
Storage	Store in a cool, dark and well-ventilated place. Keep container tightly closed when not in use - check regularly for spills. Protect from moisture. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10). *Recommended storage temperature: below 25°C.
Container	Keep in the original container. *Don't (re)use empty container before they have been cleaned. Before making transfer operations, ensure that there aren't any incompatible material residuals in the containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ (total); TWA = 3 mg/m ³ (respirable).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side protection or chemical goggles. - Hand protection: Wear protective gloves. Recommended: Protective gloves made of nitrile or butyl rubber or PVC. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, Safety shoes.

Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Contaminated clothing should be changed before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline powder
Odour	Slight
Colour	White
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	295 °C
Melting Point	126.5 °C
Freezing Point	No Data Available
Solubility	Insoluble in water
Specific Gravity	No Data Available
Flash Point	171 °C [Closed cup]
Auto Ignition Temp	510 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.05 g/cm ³
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	logPOW = 1.52
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.

Properties That May Initiate or Contribute to Fire Intensity	The product is combustible.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating and/or toxic fumes, including oxides of Carbon.
Release of Invisible Flammable Vapours and Gases	It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides and powerful reducing agents.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid generating dust. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with oxidising products and concentrated alkalis.
Hazardous Decomposition Products	Fire/decomposition may produce irritating and/or toxic fumes, including oxides of Carbon.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Harmful if swallowed and in contact with skin. Swallowing can result in nausea, vomiting, diarrhoea and abdominal pain. Can be absorbed through the skin with resultant adverse effects. - Skin corrosion/irritation: Causes skin irritation. - Eye damage/irritation: Causes serious eye irritation. - Respiratory/skin sensitisation: May cause an allergic skin reaction. - Germ cell mutagenicity: No information available. - Carcinogenicity: No information available. - Reproductive toxicity: No information available. - STOT (single exposure): Material may be irritant to the mucous membranes of the respiratory tract. - STOT (repeated exposure): No information available. - Aspiration toxicity: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: 700 mg/kg
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (Danio rerio): 0.3 mg/L (96 h) [OECD TG 203; AICIS]. - EC50, Invertebrate (Daphnia magna): 0.57 mg/L (48 h) [OECD TG 202; AICIS]. - EC50, Algae (Desmodesmus subspicatus): 9.3 mg/L (72 h) [OECD TG 201; AICIS].
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Very toxic to aquatic life with long lasting effects. Adopt good working practices, so that the product is not released into the environment.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Recover, if possible. or dispose of contents/container in accordance with local/regional/national regulations
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name	Tertiary Butyl Hydroquinone
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	AU01
Comments	Not regulated as DG when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500 kg(L) or IBCs.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tertiary Butyl Hydroquinone)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tertiary Butyl Hydroquinone)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tertiary Butyl Hydroquinone)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
ERG	171 Substances (Low to Moderate Hazard)
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tertiary Butyl Hydroquinone)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-F
Marine Pollutant	Yes

Air Transport

IATA DGR

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tertiary Butyl Hydroquinone)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002503 HSR003308 (Revoked)
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National/Regional Inventories

Australia (AIIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	217-752-2
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	TEBUHY1000, TEBUHY2000, TEBUHY4000
Revision	3
Revision Date	23 Aug 2022
Key/Legend	<p>< Less Than</p> <p>> Greater Than</p> <p>AICS Australian Inventory of Chemical Substances</p> <p>atm Atmosphere</p> <p>CAS Chemical Abstracts Service (Registry Number)</p> <p>cm² Square Centimetres</p> <p>CO₂ Carbon Dioxide</p> <p>COD Chemical Oxygen Demand</p> <p>deg C (°C) Degrees Celcius</p> <p>EPA (New Zealand) Environmental Protection Authority of New Zealand</p> <p>deg F (°F) Degrees Farenheit</p> <p>g Grams</p> <p>g/cm³ Grams per Cubic Centimetre</p> <p>g/l Grams per Litre</p> <p>HSNO Hazardous Substance and New Organism</p> <p>IDLH Immediately Dangerous to Life and Health</p> <p>immiscible Liquids are insoluable in each other.</p> <p>inHg Inch of Mercury</p> <p>inH₂O Inch of Water</p> <p>K Kelvin</p> <p>kg Kilogram</p> <p>kg/m³ Kilograms per Cubic Metre</p>

lb Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or **L** Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight