

Eastman(TM) MTBHQ

Version	Revision Date:	SDS Number:	Date of last issue: 07/09/2019
2.2	04/01/2020	15000001313	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

Precautionary Statements

:

Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Components**

Chemical name	CAS-No.	Concentration (% w/w)
2-tert-butylhydroquinone	1948-33-0	98 - 99.5
2,5-di-tert-butylhydroquinone	88-58-4	0.5 - 2

SECTION 4. FIRST AID MEASURES

If inhaled : Remove to fresh air.
Treat symptomatically.
Get medical attention if symptoms occur.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.
Get medical advice/ attention.

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- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get medical advice/ attention.
- If swallowed : Seek medical advice.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed or in contact with skin.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use water spray to extinguish.
Dry chemical
Carbon dioxide (CO₂)
- Unsuitable extinguishing media : None known.
- Hazardous combustion products : Carbon oxides
- Further information : Minimize dust generation and accumulation.
- Special protective equipment for fire-fighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.
- Environmental precautions : Avoid release to the environment.
- Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Minimize dust generation and accumulation.
- Advice on safe handling : Avoid contact with skin, eyes and clothing.
Do not taste or swallow.

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Use only with adequate ventilation.
Wash thoroughly after handling.

Conditions for safe storage : Keep container tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

Engineering measures : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection : Wear respiratory protection.

Hand protection

Remarks : Wear suitable gloves.

Eye protection : Safety glasses

Protective measures : Wear suitable protective equipment.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Crystalline powder

Color : tan

Odor : slight

Odor Threshold : not determined

pH : not determined

Melting point/range : 257 °F / 125 °C

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Boiling point/boiling range	:	563 °F / 295 °C
Flash point	:	340 °F / 171 °C
		Method: Cleveland open cup
Evaporation rate	:	not determined
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	not determined
Relative vapor density	:	not determined
Relative density	:	1.05 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Pow: 33 log Pow: 1.52
Autoignition temperature	:	855 °F / 457 °C Method: ASTM D2155
Decomposition temperature	:	Method: DTA No exotherm to 400°C
Viscosity		
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	not determined
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Dust deflagration index (Kst)	:	375 m.b./s Method: ASTM E1226-94e
Dust explosion class	:	St 3 - very strong explosion

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
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Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	Avoid dust formation.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide (CO ₂) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if swallowed or in contact with skin.

Product:

Acute oral toxicity	:	Remarks: Harmful if swallowed.
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: Harmful in contact with skin.

Components:**2-tert-butylhydroquinone:**

Acute oral toxicity	:	LD50 Oral (Rat, male): 951 mg/kg LD50 Oral (Rat, female): 1,131 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Guinea pig): > 1,000 mg/kg

2,5-di-tert-butylhydroquinone:

Acute oral toxicity	:	LD50 Oral (Rat): 50 - 300 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Guinea pig): > 21,000 mg/kg Remarks: (highest dose tested)

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks	:	Causes skin irritation.
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Components:**2-tert-butylhydroquinone:**

Species	:	Guinea pig
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Exposure time : 24 h
Result : slight

2,5-di-tert-butylhydroquinone:

Species : Rabbit
Exposure time : 24 h
Result : slight to moderate

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : Causes serious eye irritation.

Components:**2-tert-butylhydroquinone:**

Species : Rabbit
Result : irritating

2,5-di-tert-butylhydroquinone:

Species : Rabbit
Result : strong
Remarks : Read-across from a similar material

Respiratory or skin sensitization**Skin sensitization**

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Product:

Remarks : May cause an allergic skin reaction.

Components:**2-tert-butylhydroquinone:**

Test Type : Skin Sensitization
Species : Guinea pig
Result : slight

2,5-di-tert-butylhydroquinone:

Test Type : Skin Sensitization
Species : Guinea pig
Result : non-sensitizing

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

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Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 3.2 mg/l
Exposure time: 96 h

2,5-di-tert-butylhydroquinone:

Toxicity to fish

: LC50 (Pimephales promelas (fathead minnow)): 0.6 mg/l
Exposure time: 96 h
Remarks: Read-across from a similar material

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 3.2 mg/l
Exposure time: 96 h
Remarks: Read-across from a similar material

LC50 (snail): 32 mg/l
Exposure time: 96 h
Remarks: Read-across from a similar material

LC50 (flatworm): 3.2 mg/l
Exposure time: 96 h
Remarks: Read-across from a similar material

Persistence and degradability**Components:****2-tert-butylhydroquinone:**

Biodegradability

: Concentration: 20 mg/l
Biodegradation: 19 %
Exposure time: 28 d

Biochemical Oxygen Demand (BOD) : BOD-5:
70 mg/g

BOD-20:
2,000 mg/g

Chemical Oxygen Demand (COD) : 2,200 mg/g

ThOD : 2,450 mg/g

2,5-di-tert-butylhydroquinone:

Biodegradability

: Concentration: 20 mg/l
Biodegradation: 19 %
Exposure time: 28 d
Remarks: Read-across from a similar material

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION**International Regulations****IATA-DGR**

UN/ID No.	: UN 3077
Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (2-tert-butylhydroquinone)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 956
Packing instruction (passenger aircraft)	: 956
Remarks	: Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

IMDG-Code

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-tert-butylhydroquinone)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes
Remarks	: Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

UN/ID/NA number	: UN 3077
Proper shipping name	: Environmentally hazardous substance, solid, n.o.s.

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	(2-tert-butylhydroquinone)
Class	: 9
Packing group	: III
Labels	: CLASS 9
ERG Code	: 171
Marine pollutant	: no
Remarks	: Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards

: Acute toxicity (any route of exposure)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitization

SARA 313

: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

TCSI

: On the inventory, or in compliance with the inventory

TSCA

: All substances listed as active on the TSCA inventory

AICS

: On the inventory, or in compliance with the inventory

DSL

: All components of this product are on the Canadian DSL

ENCS

: On the inventory, or in compliance with the inventory

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ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

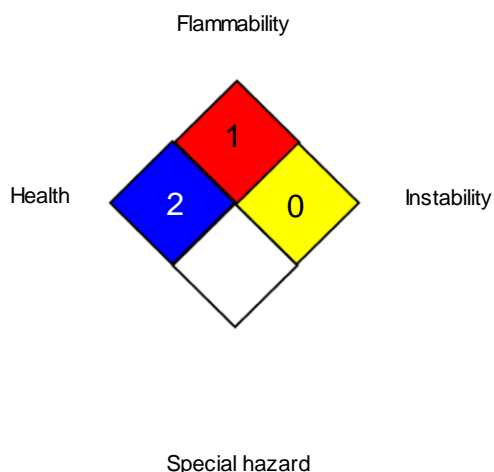
IECSC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION**Further information****NFPA 704:****HMIS® IV:**

HEALTH	/	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC -

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International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 04/01/2020

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8