

# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

**Product name:** Eastman Tenox(TM) 25 Food-Grade Antioxidant, Kosher

**Product No.:** EAN 970993. 13385-00, P1338500, P1338502, P1338504, P1338503

### Relevant identified uses of the substance or mixture and uses advised against

**Identified uses:** antioxidant (food grade)

**Uses advised against:** None known.

### Details of the supplier of the safety data sheet

#### Manufacturer / Supplier

Eastman Chemical Company  
200 South Wilcox Drive  
Kingsport, TN 37660-5280 US  
+14232292000

Visit our website at [www.EASTMAN.com](http://www.EASTMAN.com) or email [emnmsds@eastman.com](mailto:emnmsds@eastman.com)

### Emergency telephone number:

For emergency health, safety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

## SECTION 2: Hazards identification

### Hazard Classification:

#### Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Skin sensitizer	Category 1

**OSHA Specified Hazards:** not applicable

### Warning label items including precautionary statement:

#### Pictogram:



**Signal Words:** WARNING!

**Hazard Statement(s):** H315: Causes skin irritation.  
H319: Causes serious eye irritation.  
H317: May cause an allergic skin reaction.

**Precautionary Statement:**

**Prevention:** P264: Wash hands thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.  
P272: Contaminated work clothing should not be allowed out of the workplace.

**Response:** P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.  
P363: Wash contaminated clothing before reuse.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313: If eye irritation persists: Get medical advice/attention.

**Disposal:** P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):** None known.

### SECTION 3: Composition/information on ingredients

#### Substances / Mixtures

##### General information:

Chemical name	Concentration	Additional identification	Notes
corn oil	31%	CAS-No.: 8001-30-7	#
emulsifier	31%	CAS-No.: proprietary	
propylene glycol	15%	CAS-No.: 57-55-6	#
butylated hydroxytoluene	10%	CAS-No.: 128-37-0	#
2-tert-butylhydroquinone	10%	CAS-No.: 1948-33-0	
citric acid	3%	CAS-No.: 77-92-9	

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.  
This substance has workplace exposure limit(s).

### SECTION 4: First aid measures

#### Description of first aid measures

**Inhalation:** Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

<b>Skin Contact:</b>	Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
<b>Ingestion:</b>	Seek medical advice.
<b>Most important symptoms and effects, both acute and delayed:</b>	Allergic rash. May irritate and cause redness and pain.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Hazards:</b>	None known.
<b>Treatment:</b>	Treat symptomatically.

**SECTION 5: Firefighting measures**

<b>General Fire Hazards:</b>	None known.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media:</b>	Water spray. Dry chemical. Carbon Dioxide. Alcohol foam.
<b>Unsuitable extinguishing media:</b>	None known.
<b>Special hazards arising from the substance or mixture:</b>	None known.
<b>Advice for firefighters</b>	
<b>Special fire fighting procedures:</b>	None known.
<b>Special protective equipment for fire-fighters:</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**SECTION 6: Accidental release measures**

<b>Personal precautions, protective equipment and emergency procedures:</b>	Wear appropriate personal protective equipment.
<b>Environmental Precautions:</b>	Avoid release to the environment.
<b>Methods and material for containment and cleaning up:</b>	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.
<b>Notification Procedures:</b>	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**SECTION 7: Handling and storage:**

**Precautions for safe handling:** Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Keep container closed. Keep from freezing.

**Specific end use(s):** antioxidant (food grade)

**SECTION 8: Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical name	Type	Exposure Limit Values	Source
corn oil - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
corn oil - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
propylene glycol - Aerosol.	TWA	10 mg/m3	US. AIHA Workplace Environmental Exposure Level (WEEL) Guides (2009)
butylated hydroxytoluene - Inhalable fraction and vapor.	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (01 2010)

**Exposure controls**

**Appropriate engineering controls:** 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.

**Individual protection measures, such as personal protective equipment**

**General information:** Eye bath. Washing facilities. Safety shower.

**Eye/face Protection:** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand Protection:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

**Other:** No data available.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

**Hygiene measures:** Observe good industrial hygiene practices.

**Environmental Controls:** No data available.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

#### Appearance

<b>Physical State:</b>	Liquid
<b>Form:</b>	Viscous Liquid
<b>Color:</b>	Amber
<b>Odor:</b>	slight
<b>Odor Threshold:</b>	Not determined.
<b>pH:</b>	No data available.
<b>Melting Point</b>	No data available.
<b>Boiling Point:</b>	215 °C
<b>Flash Point:</b>	113 °C (method unspecified) (estimated)
<b>Evaporation Rate:</b>	Not determined.
<b>Flammability (solid, gas):</b>	No data available.
<b>Flammability Limit - Upper (%)-:</b>	No data available.
<b>Flammability Limit - Lower (%)-:</b>	No data available.
<b>Vapor pressure:</b>	Not determined.
<b>Vapor density (air=1):</b>	Not available.
<b>Specific Gravity:</b>	0.938 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	Appreciable
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Autoignition Temperature:</b>	No data available.
<b>Decomposition Temperature:</b>	Thermal stability not tested. Low stability hazard expected at normal operating temperatures.
<b>Dynamic Viscosity:</b>	190 mPa.s (25 °C)
<b>Kinematic viscosity:</b>	202.5 mm <sup>2</sup> /s(Estimated)
<b>Explosive properties:</b>	No data available.
<b>Oxidizing properties:</b>	No data available.

**SECTION 10: Stability and reactivity**

<b>Reactivity:</b>	None known. Materials containing similar structural groups are normally stable.
<b>Chemical Stability:</b>	Not fully evaluated.
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Conditions to Avoid:</b>	None at ambient temperatures.
<b>Incompatible Materials:</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products:</b>	Carbon Dioxide. Carbon Monoxide.

**SECTION 11: Toxicological information**

**Information on likely routes of exposure**

<b>Inhalation:</b>	None known.
<b>Ingestion:</b>	None known.
<b>Skin Contact:</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact:</b>	Causes serious eye irritation.

**Information on toxicological effects**

**Acute Toxicity**

**Oral**

**Product:** No data available.

**Specified substance(s)**

corn oil	Oral LD-50: (Rat): > 92,000 mg/kg
emulsifier	No data available.
propylene glycol	Oral LD-50: (Rat): 22,000 mg/kg
butylated hydroxytoluene	Oral LD-50: (Rat): > 6,000 mg/kg
2-tert-butylhydroquinone	Oral LD-50: (Rat, Male.): 951 mg/kg Oral LD-50: (Rat, Female.): 1,131 mg/kg
citric acid	Oral LD-50: (Rat): 2,263 mg/kg

**Dermal**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	Dermal LD-50: (Rabbit): > 2,000 mg/kg
butylated hydroxytoluene	Dermal LD-50: (Guinea Pig): > 20,000 mg/kg
2-tert-butylhydroquinone	Dermal LD-50: (Guinea Pig): > 1,000 mg/kg
citric acid	Dermal LD-50: (Rat): > 1,000 mg/kg

**Inhalation**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	LC50 (Rat, 2 h): > 317 mg/l (highest concentration tested)
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Repeated Dose Toxicity**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Skin Corrosion/Irritation:**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	(Rabbit, 24 h): none
butylated hydroxytoluene	(Rabbit, 24 h): very slight
2-tert-butylhydroquinone	(Guinea Pig, 24 h): moderate
citric acid	(Rabbit, 24 h): Slight

**Serious Eye Damage/Eye Irritation:**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	(Rabbit): very slight
butylated hydroxytoluene	(Rabbit): none
2-tert-butylhydroquinone	(Rabbit): Strongly irritating.
citric acid	(Rabbit, 24 h): moderate to strong

**Respiratory or Skin Sensitization:**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	Skin Sensitization:, (Human) - Not a skin sensitizer.

butylated hydroxytoluene	Skin Sensitization:, (Guinea Pig) - non-sensitizing
2-tert-butylhydroquinone	Skin Sensitization:, (Guinea Pig) - slight
	Skin Sensitization:, (Human) - slight
citric acid	No data available.

**Mutagenicity**

**In vitro**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**In vivo**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Carcinogenicity**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Reproductive Toxicity**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.

**Specified substance(s)**



corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	Inhalation: Respiratory tract irritation. Dermal: Skin
citric acid	Inhalation: Respiratory tract irritation.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Aspiration Hazard**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Other Adverse Effects:** No data available.

**SECTION 12: Ecological information**

**Toxicity**

**Acute toxicity**

**Fish**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	LC-50 (Oncorhynchus mykiss, 96 h): 40,613 mg/l
butylated hydroxytoluene	LC-50 (Fish, 96 h): 0.199 mg/l
2-tert-butylhydroquinone	LC-50 (Fathead Minnow, 96 h): 0.6 mg/l
citric acid	LC-50 (Fish, 48 h): 440 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.

propylene glycol	LC-50 (Ceriodaphnia, 48 h): 18,340 mg/l
butylated hydroxytoluene	EC-50 (daphnid, 48 h): 0.48 mg/l
2-tert-butylhydroquinone	LC-50 (Water Flea, 96 h): 3.2 mg/l
	LC-50 (snail, 96 h): 32 mg/l
	LC-50 (flatworm, 96 h): 3.2 mg/l
citric acid	LC-50 (daphnid, 24 h): 1,535 mg/l

**Chronic Toxicity**

**Fish**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	EC-50 (Alga, 72 h): 19,300 mg/l
butylated hydroxytoluene	EC-50 (Alga, 96 h): 0.758 mg/l
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	81.7 % (28 d, Ready Biodegradability: CO2 Evolution Test) Readily biodegradable
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	19 % (28 d)
citric acid	97 % (28 d, Ready Biodegradability: CO2 Evolution Test) Readily biodegradable

**Biological Oxygen Demand:**

**Product** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	BOD-5: 1,080 mg/g BOD-20: 1,225 mg/g
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	BOD-5: 70 mg/g BOD-20: 2,000 mg/g
citric acid	No data available.

**Chemical Oxygen Demand:**

**Product** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	1,630 mg/g
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	2,200 mg/g
citric acid	No data available.

**BOD/COD Ratio**

**Product** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Bioaccumulative Potential**

**Product:** No data available.

**Specified substance(s)**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Mobility in Soil:** No data available.

**Known or predicted distribution to environmental compartments**

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Results of PBT and vPvB assessment:** No data available.

corn oil	No data available.
emulsifier	No data available.
propylene glycol	No data available.
butylated hydroxytoluene	No data available.
2-tert-butylhydroquinone	No data available.
citric acid	No data available.

**Other Adverse Effects:** No data available.

**SECTION 13: Disposal considerations**

**Waste treatment methods**

**General information:** No data available.

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

**SECTION 14: Transport information**

*Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.*

**DOT**

Class not regulated

Possible Shipping Description(s):

not regulated

**IMDG - International Maritime Dangerous Goods Code**

Marine pollutant.: (butylated hydroxytoluene, 2-tert-butylhydroquinone)

Possible Shipping Description(s):

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (butylated hydroxytoluene,2-tert-butylhydroquinone) 9 III

**IATA**

Class 9, Packing Group III when shipped by air from or to the Netherlands or between European Union and Australia; otherwise, not regulated.

Possible Shipping Description(s):

UN 3082 Environmentally hazardous substance, liquid, n.o.s. (butylated hydroxytoluene,2-tert-butylhydroquinone) 9 III

**SECTION 15: Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

**WHMIS (Canada) Status:** controlled

**WHMIS (Canada) Hazard Classification:** D/2/B

**SARA 311-312 Hazard Classification(s):**

immediate (acute) health hazard

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical List**

NONE

**OSHA:** hazardous

**This product is permitted under existing FDA regulations for use as a direct (or an indirect) food additive.**

**TSCA (US Toxic Substances Control Act):** All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

**DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act):** All components of this product are listed on the DSL. Any impurities present in this product are exempt from listing.

**AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme):** All components of this product are listed on AICS or otherwise comply with NICNAS.

**MITI (Japanese Handbook of Existing and New Chemical Substances):** All components of this product are listed in the Handbook or have been approved in Japan by new substance notification.

**ECL (Korean Toxic Substances Control Act):** All components of this product are listed on the Korean inventory or otherwise comply with the Korean Toxic Substances Control Act.

**Philippines Inventory (PICCS) :** All components of this product are listed on the Philippine inventory or otherwise comply with PICCS.

**Inventory of Existing Chemical Substances in China:** All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

**SECTION 16: Other information**

**HMIS® Hazard Ratings:** Health - 2, Flammability - 1, Chemical Reactivity - 0

*HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.*

**Revision Information:** Not relevant.

**Key literature references and sources for data:** No data available.

**Training information:** No data available.

**Issue Date:** 11/19/2014

**SDS No.:**

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.