

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 1 of 11

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

BUTYLATED HYDROXY ANISOLE

OTHER NAMES

C11-H16-O2, (CH₃)₃CC6H₃OH(OCH₃), 3-t-butyl-4-hydroxyanisole, 3-t-butyl-4-hydroxyanisole, "phenol, 2-tert-butyl-4-methoxy-", "phenol, 2-tert-butyl-4-methoxy-", 2-tert-BHA, 2-tert-BHA, 3-BHA, 3-BHA, BHA, "2-tert-butylated hydroxyanisole", "2-tert-butylated hydroxyanisole", 2-tert-butyl-4-methoxyphenol, 2-tert-butyl-4-methoxyphenol, 4-methoxy-2-tert-butylphenol, 4-methoxy-2-tert-butylphenol, "butylated hydroxyanisole", anti-oxidant, "methoxyphenol derivative"

PRODUCT USE

Antioxidant for fats and oils, food packing. Use in food restricted.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

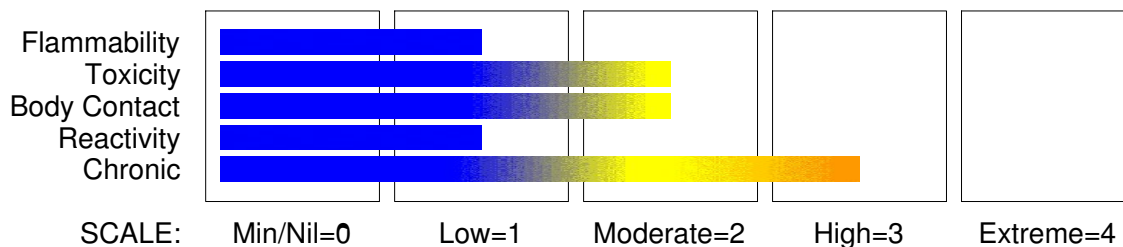
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 2 of 11

Section 2 - HAZARDS IDENTIFICATION

Carcinogen Category 1B
Eye Irritation Category 2B
Respiratory Irritation Category 3
Skin Corrosion/Irritation Category 3
Skin Sensitizer Category 1



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H335 H302 H316 H320 H317 H350

May cause respiratory irritation

Harmful if swallowed

Causes mild skin irritation

Causes eye irritation

May cause allergic skin reaction

May cause CANCER

PRECAUTIONARY STATEMENTS

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Contaminated clothing should not be allowed out of the workplace.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use personal protective equipment as required.

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

Wash hands thoroughly after handling.

Response

If eye irritation persists, get medical advice/attention.

If exposed or concerned: Get medical attention advice.

If skin irritation or rash occurs, seek medical advice/attention.

If skin irritation occurs, seek medical advice/attention.

IF ON SKIN: Gently wash with plenty of soap and water.

Specific treatment: refer to Label or MSDS.

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

Wash contaminated clothing before reuse.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 3 of 11

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
3- tert- butyl- 4- hydroxyanisole	121-00-6	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically.
The substance is readily absorbed from the gastro-intestinal tract and may be stored in body fat following large doses. It is excreted in the urine mainly as the glucuronides of oxidation products.
Up to 77% of the dose is excreted within 24 hours.

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 4 of 11

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray or fog.
Dry chemical powder.
Foam.
Carbon dioxide.

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves.
· Prevent, by any means available, spillage from entering drains or water courses.
Use water delivered as a fine spray to control the fire and cool adjacent area.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

· Solid which exhibits difficult combustion or is difficult to ignite.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
· Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
· Build-up of electrostatic charge may be prevented by bonding and grounding.
· Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
· All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Personal Protective Equipment

Breathing apparatus.
Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Use dry clean up procedures and avoid generating dust.
Place spilled material in clean, dry, sealable, labelled container.

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 5 of 11

Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.

No smoking or naked lights within area.

Avoid generating dust.

Stop leak if safe to do so.

Collect recoverable product into labelled containers for recycling.

Collect residues and seal in labelled drums for disposal.

Wash area down with large quantity of water and prevent runoff into drains.

If contamination of drains or waterways occurs, advise emergency services.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X



X



+



X



X



+

+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Use good occupational work practice.

Avoid generating and breathing dust.

Avoid smoking, naked lights or ignition sources.

Avoid sources of heat.

Use in a well-ventilated area.

Use good occupational work practice.

Always wash hands with soap and water after handling. Work clothes should be laundered separately.

SUITABLE CONTAINER

- Check that containers are clearly labelled.

Packaging as recommended by manufacturer.

Multi-ply woven plastic or paper bag with sealed plastic liner

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.

Polyethylene or polypropylene container.

Glass container or Polylined drum.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Avoid strong bases.

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 6 of 11

Section 7 - HANDLING AND STORAGE

Segregate from oleum, nitric acid and chlorosulfonic acid.
Segregate from foodstuffs and grain.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.
Store away from incompatible materials.
Store away from foodstuff containers.
DO NOT use unlined steel containers.
Store at ambient temperatures.
No smoking, naked lights, heat or ignition sources.
Keep containers securely sealed.
Protect containers against physical damage.
Check regularly for spills and leaks.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- 3- tert- butyl- 4- hydroxyanisole:

CAS:121- 00- 6 CAS:1341- 82- 8

MATERIAL DATA

CEL TWA: 10 mg/m3 (as analogue for 2,6-di-tert-butyl-p-cresol)

PERSONAL PROTECTION



EYE

- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Impervious gloves.
Rubber gloves.
Safety footwear.

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 7 of 11

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OTHER

Overalls.

· Eyewash unit.

Ensure there is ready access to a safety shower.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions.

If risk of overexposure exists, wear SAA approved respirator.

Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White waxy solid. Insoluble in water. Soluble in petroleum ether, alcohol, fats and oils. Slightly aromatic odour.

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

Molecular Weight: 180.24

Melting Range (°C): 48- 55

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable.

Volatile Component (%vol): Not applicable.

Relative Vapour Density (air=1): 6.2

Lower Explosive Limit (%): Not available.

Autoignition Temp (°C): Not available.

State: Divided solid

Boiling Range (°C): 264- 270

Specific Gravity (water=1): 1.05 @ 20 C

pH (as supplied): Not applicable

Vapour Pressure (kPa): Not applicable

Evaporation Rate: Not applicable

Flash Point (°C): 156

Upper Explosive Limit (%): Not available.

Decomposition Temp (°C): Not available.

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BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 8 of 11

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.
Presence of heat source and ignition source.
Product is considered stable under normal handling conditions.
Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Considered an unlikely route of entry in commercial/industrial environments. Some phenol derivatives may produce mild to severe damage within the gastrointestinal tract. Absorption may result in profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis (following the formation of methaemoglobin), hyperactivity, stupor, falling blood pressure, hypernea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema followed by pneumonia. Respiratory failure and kidney damage may follow. Severe phenol ingestions cause hypotension, coma, ventricular dysrhythmias, seizures and white coagulative chemical burns.

Phenol does not uncouple oxidative phosphorylation like dinitrophenol and pentachlorophenol and thus does not cause a heat exhaustion-like syndrome. Phenolic groups with ortho and para positions free from substitution are reactive; this is because the ortho and para positions on the aromatic ring are highly activated by the phenolic hydroxyl group and are therefore readily substituted.

EYE

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Some phenol derivatives may produce mild to severe eye irritation with redness, pain and blurred vision. Permanent eye injury may occur; recovery may also be complete or partial.

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 9 of 11

Section 11 - TOXICOLOGICAL INFORMATION

prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Phenol and some of its derivatives may produce mild to severe skin irritation on repeated or prolonged contact, producing second and third degree chemical burns. Rapid cutaneous absorption may lead to systemic toxicity affecting the cardiovascular and central nervous system. Absorption through the skin may result in profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis (following the formation of methaemoglobin), hyperactivity, stupor, falling blood pressure, hyperpnoea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema followed by pneumonia. Respiratory failure and kidney damage may follow.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

INHALED

Inhalation may produce health damage*.

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Considered an unlikely route of entry in commercial/industrial environments.

Exposure to high concentrations causes bronchitis and is characterised by the onset of haemorrhagic pulmonary oedema.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

Pulmonary absorption may lead to systemic toxicity affecting the cardiovascular and central nervous system. Inhalation of phenol and some of its derivatives may produce profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis, hyperactivity, stupor, falling blood pressure, hyperpnoea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema with pneumonia. Respiratory failure and kidney damage may follow. Phenols may exhibit local anaesthetic properties and, in general, are central nervous system depressants at high concentrations. The dihydroxy derivatives act as simple phenols but their effects are largely limited to local irritation. Trihydroxy derivatives may reduce the oxygen content of blood at sufficient exposure levels. Methyl phenols (cresols) typically do not pose significant inhalation hazards due to relatively low vapour pressures and objectionable odours. Substituted phenols produce similar effects to phenol although such effects may only be evident at high levels of exposure. Alkyl substitution tends to increase toxicity.

CHRONIC HEALTH EFFECTS

There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

On the basis, primarily, of animal experiments, the material may be regarded as carcinogenic to humans. There is sufficient evidence to provide a strong presumption that

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 10 of 11

Section 11 - TOXICOLOGICAL INFORMATION

human exposure to the material may result in cancer on the basis of:

- appropriate long-term animal studies
- other relevant information.

Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.

RTECS classify BHT, an analogue of the substance, as a mutagen and tumorigen and reproductive effector. Studies with BHA, however, indicate that the substance may elicit an inhibitory effect against known carcinogens.

When administered in the diet, BHA induced papillomas and squamous cell carcinomas of the forestomach in rats of both sexes and male Syrian Golden hamsters. There was no evidence that BHA was carcinogenic to mice when administered topically or by subcutaneous or intraperitoneal injection.

Chronic exposures to dust may result in pulmonary oedema or congestion.

Prolonged exposure to some derivatives of phenol may produce dermatitis, anorexia, weight loss, weakness, muscle aches and pain, liver damage, dark urine, ochronosis, skin eruptions, diarrhoea, nervous disorders with headache, salivation, fainting, increased skin and scleral pigmentation, vertigo and mental disorders. Liver and kidney damage may also ensue. Chronic phenol toxicity was first noted in medical personnel in the late 1800s when 5 and 10% phenol was used as a skin disinfectant. The term carbolic (phenol) marasmus was given to this syndrome.

Addition of structurally related phenolic compounds to the diet of Syrian golden hamsters induced forestomach hyperplasia and tumours. These compounds included 2(3)-tert-butyl-4-methoxyphenol (BHA) (CAS RN: 25013-16-5), 2-tert-butyl-4-methylphenol (TBMP) (29759-28-2) and p-tert-butylphenol (PTBP) (98-54-4); less active were catechol (154-23-4), p-methylphenol (331-39-5), methylhydroquinone (MHQ) (95-71-6) and pyrogallol (87-66-1), whilst no activity was seen with resorcinol (108-46-3), hydroquinone (123-31-9), propylparaben (94-13-3) and tert-butylhydroquinone (TBHQ) (1948-33-0).

In autoradiographic studies, intake of BHA, TBMP, catechol, PMOP, PTBP and MHQ resulted in a significant increase in the labelling index of the forestomach epithelium, whilst PMOP induced epithelial damage and pyloric regenerative hyperplasia. Catechol, CA and PYMP induced similar but less marked alterations. Both catechol and PMOP increased the labelling index in the glandular stomach. The urinary bladder was free from histo-pathological lesions, but propylparabene, catechol, TBHQ and MHQ increased the labelling index. The authors of this study concluded that long term administration of PTBP and TBMP may be carcinogenic for hamster forestomach and that both 1-hydroxy and tert-butyl substituents may play a role in the induction of forestomach tumours. Hiros, M., et al: Carcinogenesis, Vol 7, pp 1285-1289; 1986.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 2910 mg/kg

Intaperitoneal (rat) LD50: 32 mg/kg

for butylated hydroxyanisole

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002].

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

IRRITATION

Nil Reported

continued...

BUTYLATED HYDROXYANISOLE (BHA)

GHS Safety Data Sheet

Version No:2.0

Page 11 of 11

Section 12 - ECOLOGICAL INFORMATION

No data for 3-tert-butyl-4-hydroxyanisole.

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.
Consult manufacturer for recycling options.
Consult State Land Waste Management Authority for disposal.
Dissolve residual material in a suitable solvent.
Incinerate residue at an approved site.
Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,
IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable
No data available for 3-tert-butyl-4-hydroxyanisole as CAS: 121-00-6, CAS: 1341-82-8.

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
3- tert- butyl- 4- hydroxyanisole	121- 00- 6	R43

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
3- tert- butyl- 4- hydroxyanisole	121- 00- 6, 1341 - 82- 8

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018