



Safety Data Sheet (SDS)

Revision 1 / Review Date: 08/08/2020


1. Chemical Product and Company Identification

Product Name:	BHT Salwon
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
SDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	2,6-di-tert-butyl-p-cresol Antioxidant
Synonyms:	Butylated hydroxytoluene BHT
Registration No:	01-2119480433-40-0000
Product Use:	Accelerator
OSHA Status:	Not available
CAS No:	128-37-0
EC No:	204-881-4

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

<u>Signal Word:</u>	Warning
<u>Hazard Pictogram:</u>	GHS09: environment 
<u>GHS Criteria:</u>	Hazards to the aquatic environment: Chronic Category 1 H410: Very toxic to aquatic life with long lasting effects.
<u>Hazard statements:</u>	H410: Very toxic to aquatic life with long lasting effects.
<u>Precautionary statements:</u>	P273: Avoid release to the environment.
<u>Response:</u>	P391: Collect spillage.
<u>Disposal:</u>	P501: Dispose of contents/container in accordance with local/ regional/ national/ international regulation.
<u>Emergency overview:</u>	The product if on skin or eyes may cause irritation. Inhalation of the dust of the product may cause respiratory irritation..
<u>Signs and Symptoms of Exposure:</u>	May cause skin and eye redness. Coughing, sore throat, irritation to the eyes, nose and respiratory tract.

Identified Uses:

The product is designed for use as antioxidant to prevent the oxidizing processes in oil articles, polymers (rubber, elastomers and plastics), paints, inks, and etc.; as stabilizer (inhibitor) to prevent the polymerization of unsaturated hydrocarbons. The product of grade Agidol-1 crystalline also could be used as food antioxidant (E 321) and stabilizer (antioxidant) for packages contacting with food, food grade plastic and resins, cosmetics and pharmaceutical. The CSR defines the following uses of BHT: - IU0 [importation and storage –INDUSTRIAL USE]; - IU1 [Use as a stabilizing (antioxidant) component substance in manufacture of other (any, not specified) products–INDUSTRIAL USE] - IU2 [General Use as a stabilizing (antioxidant) component substance within other (any, not specified) products – INDUSTRIAL, PROFESSIONAL, CONSUMER USE]

Uses advised against:

The product is authorized only for industrial use and shall not be placed on market for consumer use. The use of BHT shall not contradict to all existing national/ regional/ local restriction applicable to that substance.

3. Composition / Information on Ingredients

Weight Percent / Typical	Component Identity	CAS Registry Number
99.8%	2,6-di-tert-butyl-p-cresol	128-37-0

4. First Aid Measures

Inhalation:

If a person breathes in large amounts of this chemical, move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get medical attention.

Eyes:

First rinse with plenty of water for several minutes. If irritation occurs, get medical attention.

Skin:

Remove contaminated clothes. Rinse and then wash skin with water and soap. If irritation occurs, get medical attention.

Ingestion:

If affected person is in conscious state, then rinse mouth. Keep the affected person warm and at rest. Get medical attention.

If Swallowed:

If affected person is in conscious state, then rinse mouth. Keep the affected person warm and at rest. Get medical attention.

Most important symptoms and effects,

Both acute and delayed:

inhalation: to high concentration of dust may cause irritation symptoms to respiratory apparatus. E
Eye and skin contact: May cause skin or eye irritation.

Indication of any immediate medical attention and
Special treatment needed:

Acute exposure: for special Medical treatment please refer to medical professionals.

5. Fire-Fighting Measures

Suitable Extinguishing Media:

Extinguish with Carbon dioxide and powdered fire extinguisher. Water and foam extinguishing can be used only in case of extreme necessity.

Special Fire Fighting Procedures:

The product is hazardous to aquatic environment. Avoid unnecessary run-off of fire-prevention media and of extinguishing media (water cooling, fighting a fire with water and foam) which may lead transfer of BHT to sewage collector, ground and surface water

Special hazard arising from the substance or mixture:

Fire and explosion hazards: The product burns with emission of toxic gases of carbonic oxide..

Personal protection:

Use corresponding protective clothes, individual means of eye protection, self-contained breathing apparatus. For protection of the breathing apparatus use segregate mask with forced air supply.

6. Accidental Release Measures

Steps to be taken in case material is spilled:

Avoid direct contact with eyes, skin, and inhalation of dust. Use corresponding protective clothes, individual means of eye protection, self-contained breathing apparatus. Eliminate sources of ignition and sparks. If appropriate, provide ventilation of premises. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

Environmental Disposal Information:

Do not let this chemical enter the environment, keep away from drains, surface and ground water. BHT is classified as very toxic to aquatic life with long lasting effects. Do NOT let this chemical enter the environment.

Waste Disposal:

Reclaim or dispose of in accordance with local, state, and federal regulations.

7. Handling and Storage:

Precautions to be taken in handling:

Any person who comes into contact with BHT needs to be trained in proper handling and safety per applicable federal, state and local laws and regulations. Employers must advise

Employees of all areas and operations where exposure to BHT might occur. Avoid dust generation. Avoid inhalation of dust, ingestion, and contact with eyes and skin. Do not eat, drink, or smoke during work. Wash hands before eating.

Storage:

Store separated from food and feedstuffs in covered dry storehouses at a distance of 1 meter from heating body at the temperature from minus 300C to plus 40 0C protecting from direct sunlight and humidity.

In case of use of Agidol-1 crystalline as food additive (antioxidant) the storage conditions shall correspond to national / regional / local requirements of food law.

Substance, incompatible in joint storage:

Strong Oxidizer.

Shelf life (guaranteed): Agidol-1 grade "A" – 1.5 year, grade "B" – 5 years since manufacture date.

Shelf life (guaranteed): Agidol-1 crystalline: – 1.5 year since manufacture date.

Influence of the identified uses, specified in sub-paragraph 1.2. of the eSDS, to the human health: For more detailed Information on risks, RMM and control measures, please, refer to Section 8 and Annex I of the eSDS.

Influence of the identified uses, specified in sub-paragraph 1.2. of the eSDS, to the environment: BHT is classified as very toxic to aquatic life with long lasting effects. Do NOT let this chemical enter the environment. For more detailed information, please, refer to Sections 8, 12 and Annex I of the eSDS.

8. Exposure Controls / Personal Protection

Controls Parameters:

Occupational Exposure Limit values:

No harmonized OEL values are established for BHT in the EU. Below are provided International Occupational Exposure Limit values (OEL) for BHT.

Control parameter	Standard	Data source	Notes
TLV (TWA, 8 hours)	2 mg/m ³ inhalable particulate and vapour	ACGIH	No harmonized OEL values are established for BHT in the EU. These values are not legally binding and are referred here for recommendation purpose only. All currently adopted by the national/regional competent authority levels on safe exposure to this chemical shall apply.

DNEL/DMEL from the CSR in accordance with Regulation (EC) No. 1907/2006:

The following critical DN(M)ELs are proposed:
DMEL=2 mg/m³ (inhalable particulate and vapour) (Note: These values are not legally binding and are referred here for Recommendation purpose only. All currently adopted by the national/regional competent authority levels on safe exposure to this chemical shall apply).

PNECs from the CSR in accordance with Regulation (EC) No. 1907/2006:

PNEC (water) = 0.004 mg/L;
PNEC (sediment) = 0.731 mg/kg;
PNEC (soil) = 0.350 mg/L.

(Note: These values are not legally binding and are referred here for recommendation purpose only. All currently adopted By the national/regional competent authority levels on safe exposure to this chemical shall apply).

Exposure Controls.

Engineering controls and good work practices:

Engineering controls and good work practices should be sufficient to reduce exposures below the workplace standards for BHT established by the national regulations to the lowest level achievable. The premises designed for work with the product shall be equipped with supply and exhaust Ventilation corresponding to conditions of the Manufacturing occupations. At the places where dust formation is possible and emission of vapour could be necessary local exhaust ventilation. Periodic analytical control of air condition at workplaces, engineering control of used equipment condition shall be carried out according to federal / national / local legislation in force.

Individual protection measures, such as personal protective equipment.

Personal protective equipment:

Respiratory protection should be used in accordance with federal / national / local legislation requirements and used in the proper way depending on the parameters of a work area and possibility of direct contact with the product.

Respiratory Protection:

If there is a potential of vapour inhalation, dust of BHT it is recommended to use respiratory protection. Determine whether workers are physically able to perform the work and are trained to use the equipment.

Skin protection:

During the work with the product use corresponding protective cloth, closed shoes and gloves of tight dust-proof material.

Eye and Face Protection:

If there is a potential that this chemical can come in contact with eye or face, eye goggles and face masks shall be used.

Hazard communication:

The transmittal of hazard information to workers is to be accomplished by such means as container labelling and other forms of warning, material safety data sheets, and employee training.

Housekeeping and Hygiene Facilities:

The workplace should be kept clean, orderly, and in a sanitary condition. Do not eat, drink, or smoke during work. Wash hands before eating. Take shower upon completion of work.

Environmental Exposure controls:

Emission sources:

Emissions of substance to the atmosphere from ventilation systems, drainage water.

Summary of RMM relevant to environment:

Learn legislation requirements with regards to the emissions to the atmosphere, drainage waters. BHT content in air emissions and drainage waters shall not exceed the norms established by national / regional / local requirements.

9. Physical and Chemical Properties

Appearance: Solid substance (in the forms of flakes, crystals)

Odour: Slight odour

Odour threshold: No data available

pH: Not applicable

Melting point/freezing point: 70oC

Initial boiling point and boiling range: 265oC

Flash point: 114oC

Evaporation rate: Not applicable

Flammability: Not Flammable

Upper/lower flammability or explosive limits: No data available

Vapour pressure: 0.00177 mm Hg; 0.236 Pa (calculated at 25 °C)

Vapour density: No data available

Relative density: 1.04 (relative density at 20 0 C)

Average dense loaded density for flakes form 0,520 g/sm³

Average dense loaded density for crystalline form 0,654 g/sm³

Solubility in water: <1 mg/l (at 25 °C)

Solubility in other media: Dissolves in etanol, acetone, ecetic ether, methylene chloride, carbon tetrachloride, benzol, benzene, fats.

Partition coefficient: n-octanol/water: log Kow/ log Pow = 5 (caulculated)

Auto-ignition temperature: 425°C

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: Not explosive, Contains no groups associated with explosive properties.

Oxidising properties: Not oxidizing

Other information

Henry's law constant (HLC): 0.342 Pa-m³/ mole (estimated, at 25 °C)

10. Stability and ReactivityReactivityChemical dangers:

The substance decomposes on burning and on contact with oxidizing materials.

Stability conditions:

Stable if stored and applied as directed.

Possibility of hazardous reactionsSpecial precautions:

Store separated from strong oxidants.

Conditions to avoidConditions contributing to instability:

Exposure to high temperatures, open flame, long term exposure To direct sunlight, contact with strong oxidizers.

<u>Incompatibilities:</u>	Strong oxidizers.
<u>Hazardous decomposition products:</u>	Exposure to high temperatures can lead to decomposition with Emission of toxic fumes, carbonic oxides.

11. Toxicological Information

This material is not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA.

OSHA Permissible Exposure Limit: Not available.

ACGIH Threshold Limit Value: 2 mg/m³, Inhalable particulate and vapor [TWA].

DMEL: 2 mg/m³ (inhalable particulate and vapor).

NIOSH: 10 mg/m³ TWA.

PNECs from the CSR in accordance with REACH regulation:
PNEC (water) = 0.004 mg/L;
PNEC (sediment) = 0.731 mg/kg;
PNEC (soil) = 0.350 mg/L

Information on toxicological effects: The toxicokinetics of BHT have been comprehensively reviewed and reported elsewhere (WHO, 1964, 1986, 1995; OECD, 2005). The uptake, metabolism, distribution and elimination of BHT were investigated in a number of in vivo and in vitro studies in animals providing similar results. Experiments in animal test systems demonstrated that BHT was readily absorbed via the gastrointestinal tract and metabolised in test animals. Higher concentrations of BHT were observed in the adipose tissue and liver. However, no bioaccumulation was seen for BHT. BHT is metabolized by cytochrome P450 (CYP) enzymes. The metabolites observed include ester glucuronide and ether glucuronide. BHT is excreted with urine (main elimination route) and faeces.

Acute toxicity:
LD50 (oral, rats) >2000 mg/kg (OECD, 2005).
LD50 (24-h oral, rats): > 6000 mg/kg bw (male/female) based on: test mat (Heisler, E. ,1989).
LD50(oral, rats): > 2000 mg/kg bw (male/female) based on: test mat (Heisler, E. ,1989).
LD50 (dermal, rats) >2000 mg/kg (OECD, 2005).
LD50 (dermal, rats) >2000 mg/kg (Price, J.B., 1987).

Acute toxicity for human: No data available.
Given, that BHT is used in industry for a long time, the lack of reports on serious adverse acute toxicity effects (e.g., death) of BHT support the low acute toxicity of BHT.

BHT are above the threshold for classification of BHT for acute toxicity (i.e.>2000 mg/kg b.w.)

Skin corrosion/irritation:

The irritating effects of BHT observed to the skin of rabbits were Mild and reversible within 72 hours (OECD, 2005). Exposure to BHT may cause skin redness (ICSC 0841). On a study conducted on the target substance (OECD 404, GLP compliant), target substance was determined as not irritating and there was no skin reaction 4 hours after the substance was applied to rabbit skin (Price, J.B., 1987).

Serious eye damage/irritation:

The irritating effects of BHT observed to the eyes of rabbits were mild and reversible within 72 hours (OECD, 2005). Exposure to BHT may cause eye redness (ICSC 0841). On a study conducted on the target substance (OECD 405, GLP compliant), target substance was determined as not eye irritant. The only observed effect was slight conjunctival redness in all rabbits within 1 hour of dosing and it had cleared 24 hours after the application of the substance (Price, J.B., 1987).

Respiratory irritation:

Respiratory irritation to dust particles may occur on inhalation of BHT.

Respiratory or skin sensitization:

Skin sensitization: No signs of sensitization were observed. None of the test animals showed any positive response at either 24 or 48 hours after the removal of the challenge patches. No sufficient evidentiary data for classification of BHT as substance causing skin sensitization.

Discussion: In available data it is reported only of single instances of human contact dermatitis cases at handling with BHT. The OECD report (OECD SIDS, 2005) also suggests no skin sensitization for the majority of the observed persons during a range of screening tests on workers and patients. It was noted that skin sensitization at contact with BHT occurred only in single instances, but the existing data is not enough for classification of BHT as substance causing skin sensitization. Nevertheless, in single instances, sensitization reaction cannot be fully excluded. So, taking into account the summarized data provided above, BHT is likely to cause allergy in susceptible individuals. Available data is not sufficient to classify BHT as Category 1 Skin Sensitizer.

Respiratory sensitization: No sufficient evidentiary data for classification of BHT as substance causing respiratory sensitization.

Discussion: Currently, no recognized animal models for the testing of respiratory hypersensitivity are available. Therefore, evidence that a substance can induce specific respiratory hypersensitivity will normally be based on human experience. However, no hypersensitivity reactions associated with exposure to BHT were reported in humans. Cases of respiratory sensitization reaction during long-term experience of industrial manufacture are not observed. In available data also no reports of human respiratory sensitization reaction at contact with BHT. Therefore, evidence that a substance can induce specific

Respiratory hypersensitivity will normally be based on human experience. However, no hypersensitivity reactions associated with exposure to BHT were reported in humans.

Germ Cell mutagenicity:

BHT is not considered as being genotoxic/ mutagenic
Discussion: BHT showed no potential to cause point mutations in bacterial and mammalian test systems (WHO, 1986; OECD, 2005). Additionally, BHT was estimated for mutagenic properties with the currently available QSAR/SAR model for this endpoint (CAESAR QSAR model for Mutagenicity v.1.0.0.5) with overall result: Non- Mutagen. There are no data on genotoxicity of BHT in humans.

Carcinogenicity:

BHT is not considered to be carcinogenic.
Discussion: The NTP 2-year study of carcinogenicity of BHT in rats and mice observed no treatment-related neoplastic lesions. The study authors concluded that BHT was not carcinogenic for F344 rats or B6C3F1 mice under applied test conditions (NTP, 1979). The International Agency on Research of Cancer (IARC) provides the following evaluation of carcinogenicity of BHT (IARC, 1986, 1987): Overall evaluation BHT: is not classified as carcinogen (Group 3).

Reproductive toxicity:

In general, there is no clear evidence for a direct effect of BHT on fertility/ fetal development, in the absence of systemic toxicity.

STOT-single & repeated exposure:

BHT was reported to affect liver as a target organ in animal repeated dose toxicity studies (WHO, 1995). BHT has been shown to induce hepatocellular necrosis and proliferation in male Wistar rats at doses which exceeded the maximum tolerated dose (sublethal oral doses of 1000 -1250 mg/kg bw/day).

The Joint FAO/WHO Expert Committee on Food Additives considers enzyme induction as the most sensitive index of toxicity effects of BHT on liver (WHO, 1995). This evaluation report also conclude that a well-defined threshold was demonstrated at a dose of 100 mg/kg bw/day in a long-term study with a NOEL of 25 mg/kg bw/day.

12. Ecological Information

BHT is classified as very toxic to aquatic life with long lasting effects. To reduce the risks connected with release of BHT to the environment the measures of Good Manufacturing Practice, engineering control of production equipment condition, corresponding organization of handling operations, transportation, storage shall be adopted. If the substance is present in emissions to air and sewage waters the limits of its concentration shall not exceed the limits established by federal / state and local legislation.

Aquatic environment:

BHT is not considered to degrade fast in the environment. The BCF/BAF values estimated for BHT are above the cut-off values for bioaccumulation (<500 L/kg wet-w) suggesting that BHT may have some potential for bioaccumulation in aquatic life.

Acute toxicity L(E)C50

0.464 mg/L	fish, estimated (ECOSAR v.1.00)
0.386 mg/L	invertebrates, estimated (ECOSAR v.1.00)
0.84 mg/L	invertebrates, estimated
0.577 mg/L	green algae, estimated (ECOSAR v.1.00)

In addition, a short-term Daphnia magna toxicity test using the test substance was conducted fulfilling guideline requirements of OECD 202 and complying with GLP (Priestly, S.L., 2010).

EC50 (48-Hour) = 0.61 mg/L test mat. (nominal) based on: mobility (95 % CI: 0.51-0.82 mg/L).

NOEC (48-hour) = 0.23 mg/L test mat. (nominal) based on: mobility.

Chronic toxicity NOEC:

0.053 mg/L	fish, measured
0.041 mg/L	fish, estimated (ECOSAR v.1.00)
0.061 mg/L	invertebrates, estimated (ECOSAR v.1.00)
0.363 mg/L	green algae, estimated (ECOSAR v.1.00)

The BCF/BAF values estimated for BHT are above the cut-off values for bioaccumulation (500 L/kg wet-w). Based on the data provided above and taking into account the results of measurements / estimations of toxicity of BHT (LC50/EC50 <1 mg/l, NOEC <1 mg/l) the product is classified for aquatic environment as follows:

Hazardous to aquatic life: Chronic Category 1

Terrestrial Environment:

There are no data on toxicity of BHT to terrestrial (soil) organisms. The value for soil organic carbon-water partition coefficient calculated using KOCWIN v. 2.0 (log Koc = 3.91 -4.17) suggests that BHT has some potential to adsorb onto soil and sediment. In the absence of ecotoxicity data for soil organisms, the PNEC soil is calculated using the equilibrium partitioning method (EPM) as follows (in accordance with ECHA Guidance on Information Requirements, Part B):

$PNEC_{soil} = (0.174 + 0.0104 \times Koc) \times PNEC_{water}$

PNEC soil = 0.350 mg/kg.

Note: in calculations of PNEC were followed precautionary approach and used the lowest estimated Koc = 8183 l/kg.

PNECwater = 0.004 mg/l.

Persistence and degradability

Hydrolysis

BHT is a solid substance which is poorly soluble in water. (solubility is less than 1 mg/l at 25°C). It contains functional groups with weak potential for dissociation. Based on the dissociation constant data and assuming poor solubility of BHT, this substance is not likely to dissociate significantly in water under normal environmental conditions.

Biodegradation:

Estimation of biodegradation and half-lives for volatilization from rivers and lakes, based upon a range of QSAR models shows that BHT will not fast degrade in environment. Overall, its degradation in environment will be determined by biotic and

abiotic transformation. The QSAR models predict timeframe within weeks for primary biodegradation of BHT and weeks-months for its ultimate degradation. The results of estimations are provided below.

BHT biodegradation half-life (BIOWIN v 4.10 estimation):

water 900 hours (37.5 days);

sediment 8100 hours (337.5 days).

BHT volatilization half-life (EPI Suite, v 4.00):

rivers 10,78 days;

lakes 122,8 days

Photo transformation/photolysis:

Photo oxidation of BHT (rate constant estimation for atmosphere gas phase reaction with hydroxyl radical, half life) carried out with QSAR model (AOPWIN v 1.92; EPI Suite v 4.00) is provided below.

Overall OH Rate Constant: =18.2887 x 10⁻¹² cm³/molecule-sec.

Half Life = 7.018 hours / 0.585 days.

Note: estimation is based on average atmospheric abundance of photo-chemically produced hydroxyl radicals (1.5x10⁶ OH/sm³), at 12 hours day and temperature 25°C.

Aquatic bioaccumulation:

There are no experimental data on bioaccumulation of BHT by aquatic organisms. The bioconcentration factors and bioaccumulation for fishes estimation results carried out with BCFBAF software (v 3.00), and biotransformation rate estimation are provided below.

Log BCF = 2.81; BCF = 646 L/kg wet-wt.

Note: estimation based on regression.

Log BCF = 2.90 / 3.01 / 3.04; BCF =798 / 1029 / 1100 L/kg wet-wt.

Note: estimation based on Arnot-Gobas method BCF & BAF for upper / lower trophic levels, correspondingly.

Log BAF = 2.91 / 3.08 / 3.22; BAF =820 / 1206 / 1669 L/kg wet-wt.

Note: estimation based on Arnot-Gobas method BCF & BAF for upper / lower trophic levels, correspondingly.

Biotransformation half-life = 1.15 days

Note: normalized to 10 g. fishes.

The results of BCF/BAF estimation for fishes are higher of cut-off value for bioaccumulation (500 l/kg wet-w). For the purposes of classification in accordance to CLP/GHS criteria it is suggested that BHT is able to bioconcentration and has some potential to bioaccumulation in aquatic organisms.

Terrestrial bioaccumulation:

There is no experimental data on terrestrial bioaccumulation of BHT. Taking into account that BHT is not considered to degrade fast in the environment and considering the estimation results of such values as partition coefficient: n-octanol/water (Log Kow = 5.03) and BCF/BAF for aquatic organisms (fishes), BHT is likely

to have some potential to bio concentration and bio magnification. Nevertheless, taking into account that BHT almost insoluble in water and the substance toxic kinetics researches, the bioaccumulation of BHT by terrestrials are not likely.

Mobility in Soil:

BHT is solid, nonvolatile, and insoluble in water (solubility less than 1 mg/l at 25°C) substance with low vapour pressure. The value value for soil organic carbon-water partition coefficient $\log K_{oc} = 3.91 - 4.17$ (KOCWIN v 2.0 estimation), suggests that BHT has some potential to adsorb onto soil and sediment and, therefore, it is not likely to contaminate groundwater.

Moreover, QSAR BHT evaporation half-life from water estimation suggest low BHT mobility level in water, as the result of absorption by sediment.

BHT river half-life = 10.78 days, lakes = 122.8 days (EPI Suite, v 4.00 estimation).

BHT distribution estimation data for different emission scenario during emission to environment also confirm inclination of BHT to absorption in ground and sediment. The results of modeling are provided below.

Emission scenario	BHT distribution, %			
	air	water	ground	sediment
Emission to air, water, ground	0.463	14.7	72.3	12.5
Emission to ground	0.000315	0.0426	99.9	0.0362
Emission to air and ground	0.622	0.228	99	0.194
Emission to water and ground	0.00832	14.8	72.6	12.6

Note: EPI Suite, v 4.00 estimation. Model «Level III fugacity»

Persistence Assessment:

BHT meets the Persistence criteria for PBT and vPvB substances. The results of BHT biodegradation in water, sediment and ground estimation are provided below.

	half-life	note
Water	37.5 days (900 hours)	BIOWIN v 4.10 estimation
Sediment	337.5 days (8100 hours)	BIOWIN v 4.10 estimation
Soil	75 days (1800 hours)	EPI Suite software, estimation

Bioaccumulation Assessment:

BHT does not meet Bioaccumulation criteria for PBT substance and does not meet Bioaccumulation criteria for vPvB substance. BCF estimation results are below of the classification criteria. $BCF=646-1100$ L/kg wet-wt.

Toxicity Assessment:

BHT does not meet toxicity criteria for PBT and vPvB substance. Minimal values of measured and estimated NOEC for hydrobiont are higher than classification cut-off value 0,01 mg/l.

The results of estimation and measurements are provided below

0.053 mg/l	Fish, measured
0.041 mg/l	Fish, estimation (ECOSAR v.1.00)

Conclusions on PBT or vPvB Properties:

BHT meets the Persistence criteria for PBT and vPvB substances, but doesn't meet the criteria for classification as bioaccumulative and toxic PBT and vPvB substance. So, BHT is not PBT or vPvB substance.

Other adverse effects secondary poisoning:

BHT is of low acute and chronic toxicity. It does not bioaccumulate in mammals and, therefore, secondary poisoning to BHT via food chain is of no concern

13. Disposal Considerations

Disposal:

The product is hazardous waste. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with local regulations for hazardous wastes. The utilization of the product shall be carried out in special designated locations in compliance with national /regional / local regulations for hazardous wastes DO NOT dispose to the places designated for refuse collection. DO NOT dispose to sewerage. The recommended utilization methods: recycling, burning. Refer to national and local legislation with regards to additional Requirements on utilization conditions

Disposal of containers:

Refer your local/national/regional requirements on disposal.

14. Transport Information

UN number:

3077

UN Proper Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
2,6-di -tert-butyl-p-cresol

Transport hazard class(es) UN Class:

9

UN Packing Group:

III

Environmental Hazards:

Self-classification (in accordance with GHS/CLP classification criteria): Hazards to the aquatic environment: Chronic Category 1. H410: Very toxic to aquatic life with long lasting effects.

Special precautions for user:

A number of restrictions may apply to materials subject to local/national/regional classifications requirements. Please refer to the appropriate regulation for specific details regarding classification requirements and restrictions.

15. Regulatory Information

All components of this material are on the TSCA Inventory.

All components of this material are on the Canadian DSL.

Listed on the following Inventories:

TSCA, EINECS, DSL, AICS, PICCS, IECSC, NZIoC, KECI, ENCS, ISHL, INSQ, TCSI, VCERC, TECl and Vietnam

Export and Import of Dangerous Chemicals (Regulation (EC) No 689/2008) Information:

This substance is not listed in the Annex I of Regulation (EC) No 689/2008.

REACH Regulation (EC) No 1907/2006:

This substance is registered in accordance with provisions of REACH regulation.

Chemical safety assessment:

Chemical Safety Assessment has been carried out for this chemical in accordance with provisions of REACH regulation.

SARA TITLE III 311/312 Categories:

Not listed.

SARA TITLE III 313 Reportable ingredients:

None.

CERCLA RQ:

Not applicable.

Canada WHMIS Hazard Symbol and Class:

Not Regulated.

16. Other Information

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.