

MATERIAL SAFETY DATA SHEET

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Section 1 - Product Name

Product Name: P-tert-Butylbenzoic acid
CAS Number: 98-73-7
Chemical Formula: C₁₁H₁₄O₂
Synonyms: PTBBA; 4-tert-Butylbenzoic acid

Section 2 - Composition and Information On Ingredients

CAS#: 98-73-7
Chemical Name: 4-tert-Butylbenzoic acid
Percent: 99
EINECS/ELINCS: 202-696-3

Section 3 - Hazards Identification

Appearance: light yellow flakes.
Flash Point: > 80 deg C.
Caution! Harmful if inhaled or swallowed. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause nervous system effects.
May cause liver and kidney damage. The toxicological properties of this material have not been fully investigated.
Reproductively active.
Target Organs: Kidneys, liver, respiratory system, nervous system, male reproductive system.
Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation.
Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. May produce nervous system disturbances.
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Harmful if inhaled.
Chronic: May cause liver and kidney damage. May cause adverse reproductive effects.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cup of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: > 80 deg C (> 176.00 deg F)

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Do not breathe dust, vapor, mist, or gas. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Control/Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits:

ACGIH: none listed.

NIOSH: none listed.

OSHA - Final PELs: none listed.

OSHA Vacated PELs: 4-tert-Butylbenzoic acid: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment:

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Flakes
Appearance: light yellow
Odor: None reported.
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: 165.00 - 167.00 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density: Not available.
Molecular Formula: C₁₁H₁₄O₂
Molecular Weight: 178.23

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, dust generation, excess heat, strong oxidants.
Incompatibilities with Other Materials: Strong oxidizing agents, strong bases.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

LD50/LC50:

CAS# 98-73-7:

Draize test, rabbit, eye: 100 mg Mild;
Inhalation, rat: LC50 = >1900 mg/m³/4H;
Oral, mouse: LD50 = 568 mg/kg;
Oral, rat: LD50 = 473 mg/kg;
Skin, rabbit: LD50 = >900 mg/kg;
Skin, rat: LD50 = 300 mg/kg;

Carcinogenicity: CAS# 98-73-7, not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: **Inhalation, rat:** TCl₀ = 106 mg/m³/6H (male 7 day(s) pre-mating) **Paternal Effects - testes, epididymis, sperm duct.;** **Inhalation, rat:** TCl₀ = 12500 ug/m³/6H (male 7 day(s) pre-mating) **Paternal Effects - spermatogenesis** (incl. genetic material, sperm morphology, motility, and count).

Mutagenicity: No information found.

Neurotoxicity: No information found.

Section 12 - Ecological Information**Ecotoxicity:**

Fish: Goldfish: LC50 = 33 mg/L; 96 Hr; Unspecified.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	CANADA TDG
Shipping Name:	TOXIC SOLIDS, ORGANIC, N.O.S.	No information available.
Hazard Class:	6.1	
UN number:	UN2811	
Packing Group:	III	

Section 15 - Regulatory Information**US FEDERAL:**

TSCA: CAS# 98-73-7 is listed on the TSCA inventory.

Health & Safety Reporting List: CAS# 98-73-7: Effective 6/25/86, Sunset 12/19/95

Chemical Test Rules: None of the chemicals in this product are under a Chemical Test Rule.

Section 12b: None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule: None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs: None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances: None of the chemicals in this product have a TPQ.

Section 313: No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE:

CAS# 98-73-7 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65:

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations:



TECHNICAL DOCUMENT

■ MSDS
--- PTBBA

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases: R 22 Harmful if swallowed.

Safety Phrases:

S 22 Do not breathe dust.

S 24/25 Avoid contact with skin and eyes.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 28A After contact with skin, wash immediately with plenty of water

WGK (Water Danger/Protection):

CAS# 98-73-7: 1

Canada - DSL/NDSL: CAS# 98-73-7 is listed on Canada's DSL List.

Canada - WHMIS: This product has a WHMIS classification of D2A, D1A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List:

CAS# 98-73-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Other Information

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein; however, we makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.