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Hawley's Condensed Chemical Dictionary

ELEVENTH EDITION

Revised by

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and

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VAN NOSTRAND REINHOLD COMPANY

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di-tert-butyl peroxide. (tert-butyl peroxide; DTBP). CAS: 110-05-4.
(CH₃)₃COOC(CH₃)₃.

Properties: Clear, water-white liquid; d 0.791 (25/25C); fp -40C; bp 111C; refr index 1.389 (20C); flash p 65F (18.3C) (closed cup). Soluble in styrene, ketones, most aliphatic and aromatic hydrocarbons; insoluble in water.

Hazard: Flammable, dangerous fire hazard. Strong oxidizer, may ignite organic materials or explode when shocked or in contact with reducing materials.

Use: Polymerization catalyst for resins, including olefins, styrene, styrenated alkyds, and silicones; ignition accelerator for diesel fuel; organic synthesis; intermediate.

2,4-di-tert-butylphenol. CAS: 96-76-4.

[(CH₃)₃C]₂C₆H₃OH.

Properties: Tan, crystalline solid; mp 52C; bp 152-157C (25 mm); d 0.907 (60/4C); lb/gal 7.57 (60C); flash p 265F (129C). Soluble in methanol; ether, very slightly soluble in water. Combustible.

Hazard: See phenol.

Use: Intermediate, antioxidant, stabilizer, germicide.

2,6-di-tert-butylphenol. CAS: 128-39-2.

[(CH₃)₃C]₂C₆H₃OH.

Properties: Light straw, crystalline solid; mp 37C; d 0.914 (20C); bp 253C; flash p 245F (118C). Combustible. Soluble in alcohol and benzene, insoluble in water.

Hazard: See phenol.

Use: Intermediate, antioxidant, satisfies ASTM D910-64T for use as antioxidant in aviation gasoline.

N,N'-di-sec-butyl-p-phenylenediamine.

C₁₄H₂₄N₂.

Properties: Amber to red liquid (normally supercooled below 18C), d 0.94 (15.5/15.5C), fp 20C, flash p 290F (COC). Soluble in gasoline, absolute alcohol, and benzene; insoluble in water or caustic solutions. Combustible.

Hazard: Toxic by ingestion, inhalation, and skin absorption; strong irritant to tissue, causes skin burns.

Use: Oxidation inhibitor and stabilizer in gasoline (satisfies ASTM D910-64T as antioxidant in aviation gasoline), prevents decomposition of tetraethyl lead in gasoline.

dibutyl phosphate. (di-n-butyl phosphate).

C₁₀H₂₀O₄. 17-66-4.

Properties: Pale amber liquid, mw 210.21, mp decomposes above 100C, vap n less than 1 torr

Hazard: TLV: 1 ppm. Respiratory tract irritant. Use: Organic catalyst and antifoaming agent.

dibutyl phosphite. CAS: 1809-19-4.

(C₄H₉O)₂PHO.

Properties: Water-white liquid, bp 95C (1 mm), d 0.9860 (25C), refr index 1.4228 (25C), flash p 120F (49C), soluble in common organic solvents. Combustible.

Hazard: Moderate fire risk.

Use: Solvent, antioxidant, intermediate.

dibutyl phthalate. CAS: 84-74-2.

C₆H₄(COOC₄H₉)₂.

Properties: Colorless, odorless, stable, oily liquid; d 1.0484 (20/20C); fp -35C; viscosity 0.203 poise (20C); distillation range 227-235 (37 mm); flash p (COC) 340F (171C); wt/gal 8.72 lb (20C); refr index 1.4915 (25C); bp 340.0C; vap press 1.11 mm (150C); miscible with common organic solvents; insoluble in water. Combustible, autoign temperature approximately 750F (398.8C). Derivation: By treating n-butyl alcohol with phthalic anhydride followed by purification which results in a product unusually free from odor and color.

Grade: Technical, 99-100% dibutyl phthalate.

Hazard: Toxic. TLV: 5 mg/m³ of air.

Use: Plasticizer in nitrocellulose lacquers, elastomers, explosives, nail polish and solid rocket propellants; solvent for perfume oils; perfume fixative; textile lubricating agent; safety glass; insecticides; printing inks; resin solvent; paper coatings; adhesives; insect repellent for textiles.

2,5-di-tert-butylquinone. [C(CH₃)₃]₂C₆H₂O₂.

Properties: Yellow powder; mp 149-151C; insoluble in water; soluble in alcohol, acetone, ethyl acetate, and benzene.

Hazard: Fire risk in contact with organic materials.

Use: Oxidizing agent.

dibutylsebacate. (DBS).

C₄H₉OCO(CH₂)₈OCOC₄H₉.

Properties: Clear, colorless, odorless liquid; bp 349C (760 mm), 180C (3 mm); fp -11C; d 0.936 (20/20C); wt/gal 7.81 lb (20C); refr index 1.4395 (25C); flash p 350F (176C). Insoluble in water. Combustible.

Grade: Technical.

Use: Plasticizer, rubber softener, dielectric liquid, cosmetics and perfumes, sealing food containers, flavoring.

N,N-dibutylstearamide. C₁₇H₃₅N(C₄H₉)₂.

Properties: Yellow liquid, d 0.860 (20/20C), boil-

di-n-butyl succinate. C₁₂H₂₂O₄.

Properties: Colorless liquid, bp 120C, fp -29C, d 0.977, refr index 1.43

Derivation: Reaction of butyl alcohol with succinic acid.

Use: Insect repellent.

di-tert-butyl sulfide. (butyl sulfide).

[(CH₃)₃C]₂S.

Properties: Liquid, fp -11C, boiling range 297-303F, d 0.8316, wt/gal 6.93 lb, refr index 1.451 (20C), flash p 125F (51.6C). Combustible.

Hazard: Moderate fire risk.

Use: Intermediate, flavoring.

dibutyl tartrate.

C₄H₉OOCCHOHCHOHCOOC₄H₉.

Properties: Light tan liquid, mp 21C, bp approximately 204C (26 mm), refr index 1.4463 (20C), flash p 195F (90.5C) (closed cup), combustible, autoign temperature 544F (284.4C), wt/gal 9.07 lb (20C). Miscible with the common organic solvents, oils, hydrocarbons.

Use: Solvent and plasticizer for cellulose esters and ethers, elastomers, lubricant; rubberized fabrics; lacquers; dopes; transfer inks.

dibutylthiourea. C₄H₉NHCSNHC₄H₉.

Properties: White to light tan powder; mp 59-69C; slightly soluble in water; soluble in methanol, ether, acetone, benzene, ethyl acetate; insoluble in gasoline.

Use: Corrosion inhibitor, for pickling cast iron or carbon steel, reducing corrosion of ferrous metals and aluminum alloys in brine, intermediate.

dibutyltin-bis(lauryl) mercaptide.

(C₄H₉)₂Sn(SC₁₂H₂₅)₂.

Yellow liquid, tin content 18.5%, soluble in toluene and heptane.

Hazard: TLV: (as Sn) 0.1 mg/m³ of air, toxic by skin absorption.

Use: Antioxidant and metal cleaning (or protective) agent.

dibutyltin diacetate. CAS: 1067-33-0.

(C₄H₉)₂Sn(C₂H₃O₂)₂.

Properties: Clear, yellow liquid; bp 130C (2 mm); fp less than 12C; soluble in water and most organic solvents; flash p 290F (143C). Combustible.

Derivation: Reaction of acetic acid with dibutyltin oxide.

Hazard: TLV: (as Sn) 0.1 mg/m³ of air, toxic by skin absorption.

dibutyltin dic

(C₄H₉)₂SnC

Properties: 1

135C (10 n

(51C); ins

hot water; s

p 335F (16

Derivation: 1

with tin tel

Hazard: TL

by skin abs

Use: Organo

dibutyltin di-

(C₄H₉)₂SnC

Properties: V

ble in water

Derivation:

2-ethyl-hex

Hazard: TL

by skin abs

Use: Catalys

dibutyltin dila

(C₄H₉)₂SnC

Properties: C

23C; fp 8.0

(226C); solu

in water. C

Hazard: TL

by skin abs

Use: Stabilize

mers, cataly

dibutyltin mal

[(C₄H₉)₂SnC

Properties: W

insoluble in

esters; flash

Derivation: R

tin oxide.

Hazard: TLV

by skin abs

Use: Stabilize

ensation ca

dibutyltin oxid

[(C₄H₉)₂SnC

Properties: W

soluble in w

Derivation: I

with caustic

Hazard: TLV

by skin abs

Use: Condens

organotins.