
CYTOP[®] 340

Organophosphine

Tri-n-butyl phosphine

CYTOP 340 organophosphine is a very strong reducing agent and is classified as a pyrophoric liquid. Tributylphosphine is thermally stable and has an indefinite shelf life when stored under an inert atmosphere.

CYTOP 340 organophosphine is a useful intermediate for the preparation of tetraalkylphosphonium salts through nucleophilic displacement reactions with alkylhalides. It readily undergoes oxidation to the corresponding sulfide or oxide when treated with S_8 or H_2O_2 . This property makes it useful as an oxygen or sulfur scavenger. Like other tertiary alkylphosphines, tributylphosphine, has been used as a monodentate catalyst ligand.

Typical Properties

Formula Weight	202
Molecular Formula	$C_{12}H_{27}P$
Appearance	Clear, colorless to light yellow liquid with a garlic-like odor
Boiling Point	240° C
Specific Gravity	0.81 @ 20° C
Flash Point	>90° C
Autoignition Temperature	168° C

Handling and Storage

Keep away from heat, sparks, and flame. Handle in an atmosphere of inert gas such as nitrogen. Vapor has an offensive odor. Do not breathe. Do not get in eyes, on skin, or on clothing. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep cylinder out of sun and away from heat.

Health and Safety

The acute oral (rat) and dermal (rabbit) LD50 values for tributylphosphine are 750 mg/kg and > 2000 mg/kg, respectively. Direct contact with this material may cause severe skin and mild eye irritation. As would happen with other strong reducing agents of this type, contact with tributylphosphine such as hair or skin may result in ignition and burning. This material was non-mutagenic in the Ames Assay.

Overexposure to vapors of tributylphosphine may cause nausea and irritation of the respiratory tract.

Before handling this material read the corresponding Cytec Industries Inc. Material Safety Data sheet (MSDS) for safety and health data.

Shipping

CYTOP 340 organophosphine is available in up to ten gal (37.85 L) "pope" vessels, 700 lb (317.5 kg) cylinders, and bulk quantities.

Government Approval/Regulatory Information

For chemical inventory regulatory control listing information for the United States, Canada and European Union, see the Material Safety Data Sheet.

IMPORTANT NOTICE

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility or as an assumption of a duty on our part. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information, products or vendors referred to herein. NO WARRANTY OF FITNESS FOR PARTICULAR PURPOSE IS MADE. Nothing herein is to be taken as permission, inducement or recommendation to practice any patented invention without a license.

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