

Octadecylphosphonic Acid (ODPA)



PRODUCT IN FOCUS



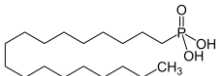
Octadecylphosphonic Acid (ODPA)

INTRODUCTION

Octadecylphosphonic acid (ODPA), a versatile chemical compound, serves as a surfactant and dispersant in applications spanning coatings, lubricants, and corrosion inhibition. With its hydrophobic octadecyl chain linked to a phosphonic acid group, it excels in surface modification, boosting adhesion in metal surfaces.

MANUFACTURE

It is synthesized by heating 1-bromooctadecane with triethyl phosphite. The reaction proceeds through a nucleophilic substitution mechanism.

Synonym	n-Octadecylphosphonic acid, Phosphonic acid, octadecyl-
CAS no.	4724-47-4
EINECS no.	225-216-4
Molecular formula	$C_{18}H_{39}O_3P$
Molecular weight	334.47
Structure	

APPLICATIONS

- It serves as a vital surface modifier and coupling agent, enhancing adhesion between substrates and coatings or adhesives
- It effectively inhibits corrosion in metals, notably aluminum and its alloys, by forming a protective barrier that wards off corrosive agents, thereby minimizing corrosion rates
- It is essential for antistatic coatings and films in plastics, textiles, and paper, aiding in static charge dissipation and improving substrate conductivity
- It enhances lubrication by serving as an additive in oils and greases, boosting boundary lubrication and diminishing friction and wear in mechanical systems like engines and gearboxes
- It enhances adhesion in paints, coatings, and adhesives, ensuring strong bonds and enhanced durability.
- ODPA-coated surfaces or nanoparticles show promise in biomedical applications like drug delivery, tissue engineering, and bioimaging due to their biocompatibility and customizable surface traits.

Octadecylphosphonic Acid (ODPA)



PRODUCT IN FOCUS



SPECIFICATIONS

Test	Unit	Specifications
Appearance	-	White to off-white powder
Identification by 1H NMR	-	Should confirm with the structure
Purity by GC	%	NLT 99.0
Melting point	°C	Min 95.0 (final melt)

STORAGE

Store at ambient temperature; Keep the container tightly closed

PACKING

HDPE drums

REACH Status

Not registered

ExSyn offers Octadecylphosphonic acid (ODPA) on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.