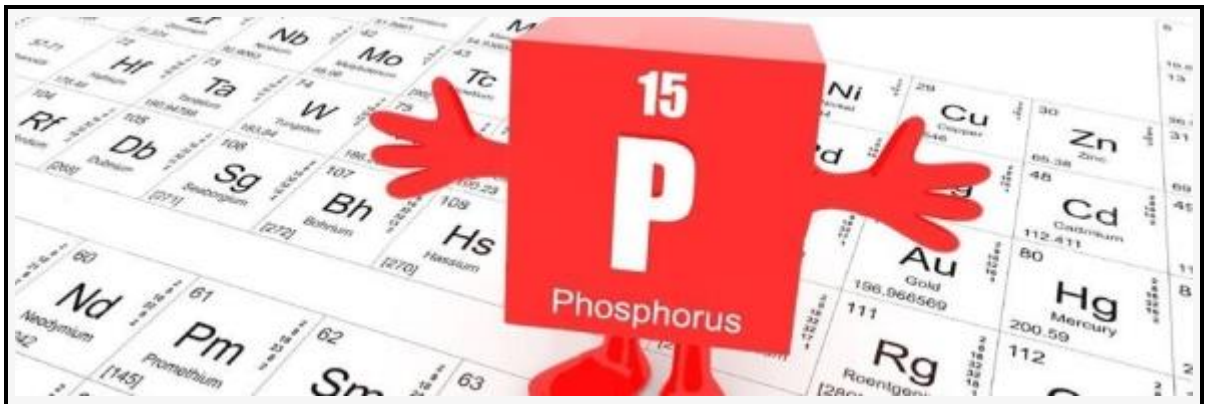
This message contains graphics. If you do not see the graphics, click here to view

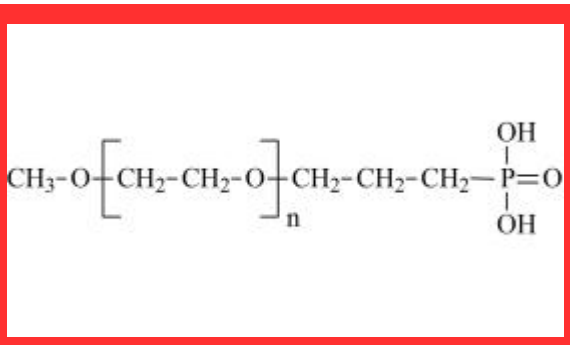
PHOSPHORUS CONTAINING POLYMERS



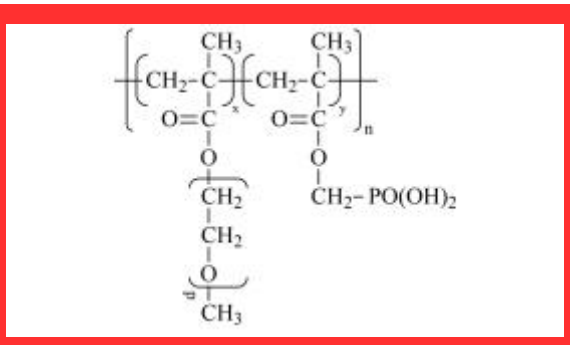
SPECIFIC POLYMERS synthesizes and produces a wide range of **phosphorus-containing monomers, polymers and building-blocks.** Thanks to the organophosphorus functionality, SPECIFIC POLYMERS chemicals have found application in very different application fields such as **Biomedical**, **Flame retardancy**, **Water treatment** or **surfaces coating (metal adhesion, anticorrosive).**

DRUG DELIVERY – DENTISTERY – MEDICAL IMAGING

Phosphorus containing polymers are widely used in the biomedical field because of their outstanding properties such as biocompatibility, protein adsorption resistance or metal and calcium binding abilities. Example of monomers and polymers produced by SPECIFIC POLYMERS for drug delivery, dentistery, medical imaging or biomimetic apatite based nanoparticles synthesis are presented here.



SP-1P-1-001
Poly(ethylene glycol) phosphonic acid



SP-4P-1-011
Poly(PEGMA-stat-MAPC1acid)

RELATED ARTICLES

Phosphorus-Containing Polymers: A Great Opportunity for the Biomedical Field
S. Monge, et al., Biomacromolecules, 12 (6), pp 1973-1982

Biomimetic Apatite-Based Functional Nanoparticles as Promising Newcomers in Nanomedicine
C. Drouet et al., J. Gen. Pract. Med. Diagn 2015 1: 001

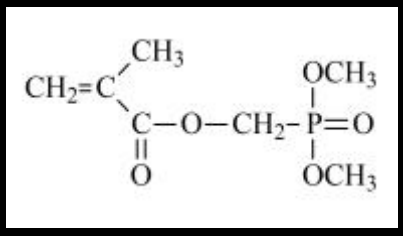
Delayed hepatic uptake of multi-phosphonic acid poly(ethylene glycol) coated iron oxide
G. Ramniceanu, et al., RSC Advances, 2016, 6, 63788-63800

Recent advances in superparamagnetic iron oxide nanoparticles (SPIONs) for cancer nanotheranostics
G. Kandasamy et al.,/ Int. J. of Pharmaceutics 496 (2015) 191-218

For more information, do not hesitate to contact us
CONTACT US

FOCUS ON MAPC1 MONOMER

MAPC1 (SP-41-003) is one of the most sell and used phophonate monomer from SPECIFIC POLYMERS catalog. **Batches up 100 grams** are produced. Whatever the application, MAPC1 can be copolymerized with other monomers to reach the targeted properties. Controlled polymerization (RAFT, ATRP) of this monomer allow reaching many different architectures (statistical, diblock, triblocks, grafted, stars, etc.).



RAFT polymerization of dimethyl(methacryloyloxy)-methyl phosphonate and its phosphonic acid derivative
B. Canniccioni et al., Polymer Chemistry, 2013, 4, 3676

Atom transfer radical polymerization of dimethyl(methacryloyloxymethyl) phosphonate
K. Mukumoto et al., European Polymer Journal 56 (2014) 11-16

FLAME RETARDANT – WATER TREATMENT

Phosphorus containing polymers are known to bring flame retardancy properties to materials. As for exemple, MAPC1 monomer from SPECIFIC POLYMERS have been grafted onto fabrics to reach fire proof properties.

Improving the flame retardancy of flax fabrics by radiation grafting of phosphorus compounds
R. Sonnier et al., European Polymer Journal 68 (2015) 313-325

Phosphonic acid moities have the ability to bind metals and also cationic species in water. Such property was used to build up water treatment processes for heavy metal removal and recovery from industrial wastewaters.

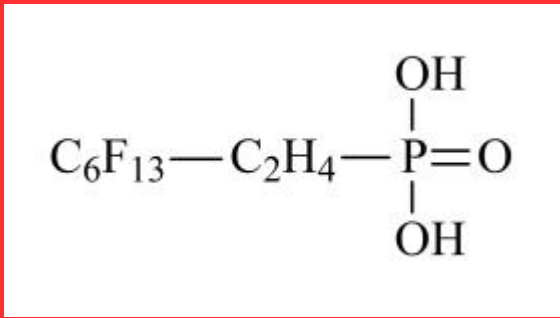
Thermosensitive polymer Enhanced Filtration (TEF) process: An innovative process for heavy metals removal and recovery from industrial wastewaters
A. Graillot et al., Separation and Purification Technology 141 (2015) 17–24

SURFACE COATING

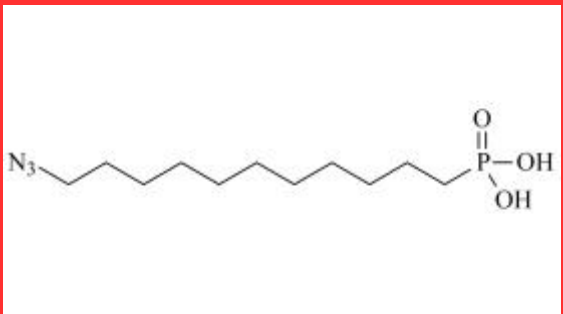
ORGANOPHOSPHORUS (MACRO)MOLECULES react with a wide range of metal and metal oxides (iron, aluminium, cerium, titanium, uranium, ITO, gadolinium, nickel, copper, zinc, calcium, quantum dots, nano-metals, etc.) and thus can be used for SURFACE MODIFICATION (grafting onto). The PHOSPHONIC ACIDS functionality was often found to be superior to silanes for other inorganic substrates than silica, because of the higher robustness and stability of metal-OP over metal-OSi bonds.

Download our previous newsletter on surface modification here

LAST NEWSLETTER



SP-01-001
Fluorophosphonic acid C6



SP-3-19-011
C11 Azide Phosphonic acid

Interested in several phosphorus containing references ?
Download our PHOS-KIT 2017

PHOS-KIT 2017


CATALOG


FLYER


DISCOVERY KITS

SPECIFIC POLYMERS
ZAC Via Domitia
150 Avenue des Cocardières - 34160- Castries - FRANCE
Tel: +33(0) 4 99 74 91 35 Fax: +33(0) 4 99 74 91 52

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