

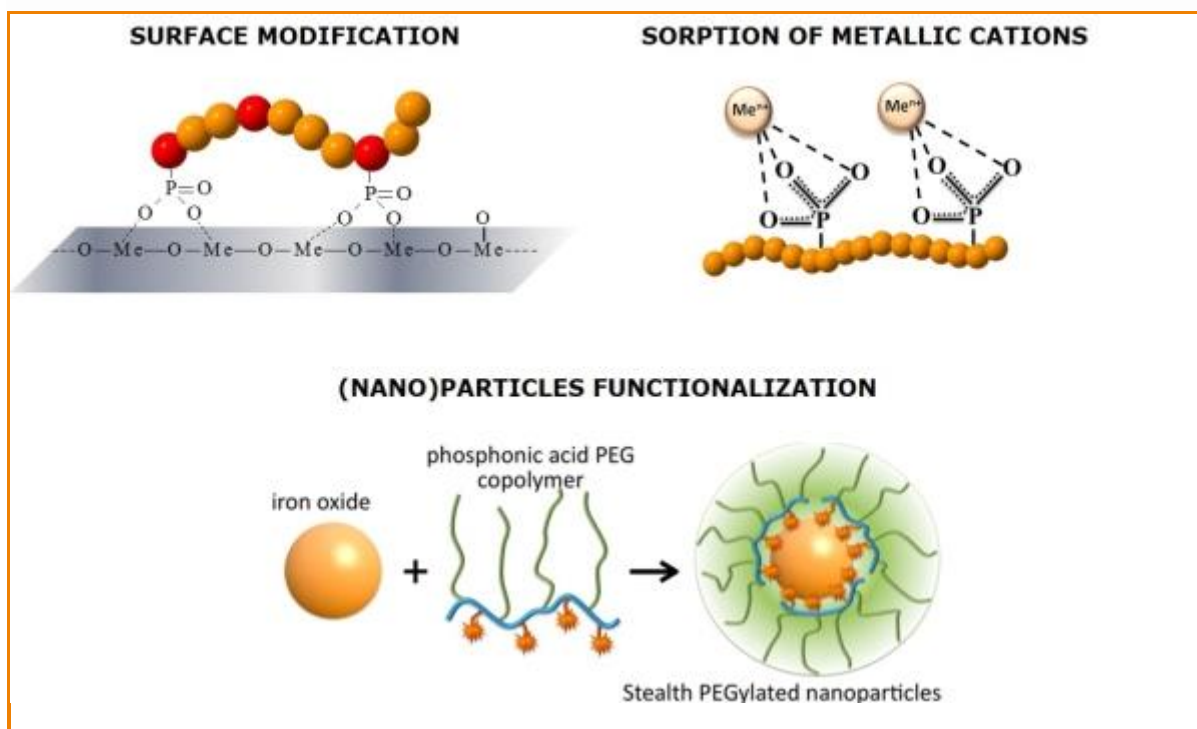
This message contains graphics. If you do not see the graphics, click [here](#) to view



Newsletter - June 2016 SELF-ASSEMBLED MONOLAYERS

PHOSPHONATES AND PHOSPHONIC ACIDS BUILDING-BLOCK, MONOMERS AND POLYMERS

ORGANOPHOSPHORUS (MACRO)MOLECULES self-assembled 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.[1]



SPECIFIC POLYMERS synthesized and provided to its customers a wide range of BUILDING-BLOCK, MONOMERS AND POLYMERS containing ORGANOPHOSPHORUS FUNCTIONAL GROUPS. Both their ester and acid forms can generally be used for surface modifications. **Different surface properties** (hydrophoby, oleophoby, biocompatibility, anticorrosion, etc.) can be reach using the appropriate building

block, monomer or polymer. SPECIFIC POLYMERS organophosphorus product are currently used in a **very wide range of applications** (metal surface coating and paints, adhesive coating, water treatment, optoelectronic, organic solar cells, biomedical, ental care, radiotherapy, drug delivery).[2-4]

[1] Queffelec, C.; Petit, M.; Janvier, P.; Knight, D. A.; Bujoli, B. Chem Rev 2012, 112, 3777.

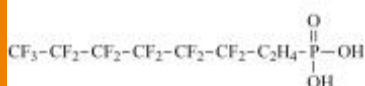
[2] Sonnier, R.; Otazaghine, B.; Viretto, A.; Apolinario, G.; Ienny, P. Eur Polym J 2015, 68, 313.

[3] Graillot, A.; Bouyer, D.; Monge, S.; Robin, J. J.; Loison, P.; Faur, C. J Hazard Mater 2013, 260, 425.

[4] Torrisi, V.; Graillot, A.; Vitorazi, L.; Crouzet, Q.; Marletta, G.; Loubat, C.; Berret, J. F. Biomacromolecules 2014, 15, 3171.

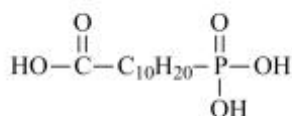


Highlighted Products



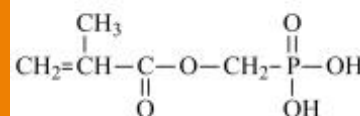
SP-01-001

Fluorophosphonic Acid
Hydrophoby - Oleophoby



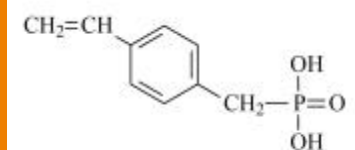
SP-3-10-003

Carboxyl - Phosphonic acid
Cross coupling



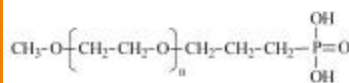
SP-41-007

MAPC1 Acid
Adhesion - Anticorrosion



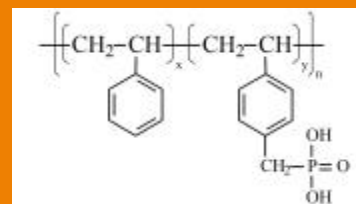
SP-51-003

Styrene Phosphonic Acid
Adhesion - Anticorrosion



SP-1P-1-001

PEO Phosphonic Acid
Hydrophilic coating



SP-5P-1-003

Poly(STY-stat-STYPHOS)
Adhesion - Anticorrosion

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PHOSPHONIC ACID KIT

SPECIFIC
POLYMERS

PHOSPHONIC ACID KIT – 5 REFERENCES @ 199€

PHOSPHONIC ACID KIT

PHOS KIT 1G
5 references @ 295€
199€

PHOS KIT 5G
5 references @ 1400€
499€



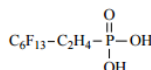
PHOSPHONIC ACIDS are a well known anchoring groups that allow the **modification of a large range of surfaces** made from metals or metal oxides (Fe, Al, Ti, Cu, Zn, Ni, Ca, Gd, Ce, U, ITO, quantum dots, nano-metals, etc.). The versatility of phosphonated molecules proposed by SPECIFIC POLYMERS allow reaching properties such as :

- **Hydrophoby – Oleophoby**
- **Low refractive index**
- **Hydrophily**
- **Anti-corrosion**
- **Fireproofing**
- **Proton conductivity**

Select your 5 products among the 15 references listed below

SP-01-001

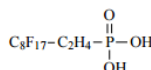
Fluorophosphonic C_6F_{13}



Hydrophoby - Lipophoby - Low RI

SP-01-002

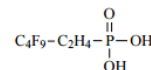
Fluorophosphonic C_8F_{17}



Hydrophoby - Lipophoby - Low RI

SP-01-013

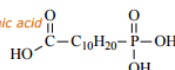
Fluorophosphonic C_4F_9



Hydrophoby - Lipophoby - Low RI

SP-3-10-003

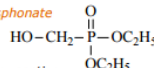
Carboxyl C_{11} Phosphonic acid



Hydrophoby - Amino reactive coupling agent

SP-3-13-002

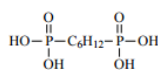
Diethyl hydroxymethylphosphonate



Coupling agent - Carboxylic reactive

SP-3-11-003

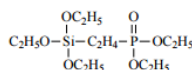
C_6 Bis Phosphonic Acid



Hydrophobic - Dipodal phosphonic acid

SP-3-12-002

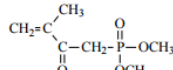
Ethoxysilane C_2 Ethylphosphonate



Glass - metal linker

SP-41-003

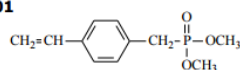
MAPCI



Methacrylate Monomer

SP-51-001

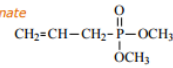
STYPHOS



Styrenic Monomer

SP-61-001

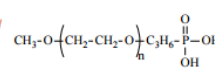
Dimethyl Allyl phosphonate



Allylic Monomer

SP-1P-1-001

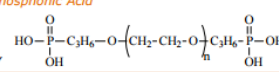
PEO Phosphonic Acid



Hydrophily

SP-1P-1-003

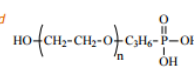
PEO Bis Phosphonic Acid



Hydrophily

SP-1P-1-006

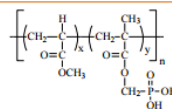
HO-PEO Phosphonic Acid



Hydrophily - Carboxylic reactive

SP-4P-1-003

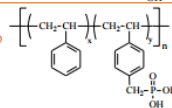
MMA co MAPCI ACID



Acrylic coating

SP-5P-1-003

STYRENE co STYPHOS ACID



Styrenic coating

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SPECIFIC POLYMERS

Functional monomer and polymer synthesis

- **RESEARCH AND DEVELOPMENT** of innovative chemicals
- **ON-DEMAND SYNTHESIS** of building-block, monomers and polymers
- **CATALOG PRODUCTS** suppliers (more than 1000 molecules)
- **UP-SCALED PRODUCTION** from g to kg
- **PHYSICO-CHEMICAL ANALYSES**



CATALOG



FLYER



DISCOVERY KITS



Publications - Scientific articles

Since 1999, the innovative building-blocks, monomers and polymers developed by SPECIFIC POLYMERS allowed significant progresses within a wide range of applications. Those led to more than 50 scientific articles.

[See scientific articles](#)

SPECIFIC POLYMERS

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