
Material overview

Properties of materials used at CHEMIS are described here in easy to understand manner.

▶ PC	▶ PPS	▶ RENY	PC
▶ PEEK	▶ PP	▶ PVC	
▶ PTFE	▶ PFA	▶ PVDF	
▶ CERAMIC	▶ PA6	▶ PA66	
▶ PA12	▶ POM	▶ PS	
▶ PO	▶ PI	[Polycarbonate]	

PC (polycarbonate) is a non-crystalline engineering plastic. It has excellent impact resistance and balanced mechanical properties and electrical properties. Moreover, because it is transparent and self extinguishing, it is used in wide range of fields such as electrical and electronic area, automobiles and medical.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 115°C
- Combustibleness UL94 HB

PPS [polyphenylene sulfide]

PPS (polyphenylene sulfide) is a crystalline super engineering plastic. It has excellent thermal resistance, and its properties hardly deteriorate even when using for long time under high temperature environment. Moreover, it has excellent chemical resistance, mechanical properties, electrical properties, and dimensional stability, and it is widely used in electrical and electronic parts, automobiles parts, chemical machinery parts etc.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 200°C
- Combustibleness UL94 V-0

RENY [RENY (Glass-fiber-reinforced polyamide MXD6)]

RENY is a crystalline engineering plastic re-inforced with 50% glass fiber with polyamide MXD6 as the base polymer. Among all plastics, it has the highest strength and coefficient of elasticity. Moreover, due to its excellent oil resistance and heat resistance, it is used in transportation machinery parts such as automobiles, general machinery, precision machinery parts, electrical and electronic equipments parts

and civil engineering and construction material in place of metals.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 105°C
- Combustiblensess UL94 HB

PEEK [Polyether ether ketone]

PEEK® (Polyether ether ketone) is a semicrystalline super engineering plastic with the highest level of performance. Concentrated sulfuric acid is the only general purpose chemical in which PEEK can be dissolved. Moreover, it has excellent heat resistance, abrasion resistance, flame resistance and hydrolysis resistance, and it is used in various fields like OA equipments, automobiles, IC wafer carrier and LCD manufacturing jigs.

PP [Polypropylene]

PP (polypropylene) is a leading crystalline general purpose plastic. With the specific gravity of 0.9, it is lightest among all general purpose plastics. Moreover, due to its excellent chemical resistance, hydrolysis resistance and electrical properties, it is used in wide range of fields as a plastic with large range of applications. It is frequently used as a replacement material for PVC (poly-vinyl chloride), which has recently come under scanner due to dioxin generation.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 115°C
- Combustiblensess UL94 V-2

PVC [Polyvinyl Chloride]

Due to its excellent water, acid, alkali and solvent resistance, it is used in water distributing pipes.

Due to its inferior heat resistance, it generates hazardous substances like chlorine gas upon combustion.

- Temperature for continuous use 35°C
- Combustiblensess -

PTFE [Polytetrafluoroethylene resin]

Polytetrafluoroethylene resin is a key resin in fluorine series of resins. It is inactive to most of the chemicals and solvents. In addition, it can be widely used in the fields of chemical, electrical, mechanical and aviation due to its excellent electrical characteristics, nonadhesiveness and lubricating properties.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 260°C
- Combustiblerness UL94 V-0

PFA [Perfluoro alkoxyalkane]

PFA (Perfluoro alkoxyalkane) is a thermoplastic fluoro resin with excellent chemical, electrical and machine characteristics. Chemically it is a highly stable material and it is not affected by most of the chemicals. It is the most suitable material for semiconductor industry where periodic exposure to highly active chemicals is required.

- Temperature for continuous use 260°C
- Combustiblerness V-0

PVDF [polyvinylidene-fluoride]

Polyvinylidene-fluoride is a balanced engineering plastic with excellent performance and molding workability like general purpose resin. It has excellent resistance to chemicals and weather, and it is used in various fields as electronic materials of binders for lithium-ion batteries, fishing line, strings of musical instruments, bulb and lining of electrodes. It does not contain any of the 6 substances restricted by RoHS.

- Temperature for continuous use 90°C
- Combustiblerness UL94-V0

CERAMIC [Ceramic (Alumina 96%)]

Ceramic (Alumina 96%) is widely used as general ceramics in large machinery parts and precision machinery parts due to its abrasion resistance, very high hardness and stable dimension. In addition, it can be glued to metals with heat treatment. Also, it is widely used in semiconductor equipments due to excellent corrosion resistance and absence of out gas in high temperature gases.

- It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).
- Continuous use temperature 1500°C
- Combustiblerness -

PA6 [Polyamide6 (6 Nylon)]

PA6 (polyamide6=Nylon 6) is a crystalline engineering plastic. It is a strong material with small coefficient of friction. Despite of that, it has excellent resistance to abrasion and self extinguishing properties. Since it is also oil resistant and chemical resistant, it is suitable for machine material. However, one drawback is that its high hygroscopic properties must be considered during design.

- It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent

chrome, PBB, PBDE).

- Continuous use temperature 65°C
- Combustiblensess UL94 V-2

PA66 [Polyamide 66 (66 Nylon)]

PA66 (polyamide66=Nylon 66) is a crystalline engineering plastic. It is a strong material with small coefficient of friction. Despite of that, it has excellent resistance to abrasion and self extinguishing properties. Since it is also oil resistant and chemical resistant, it is suitable for machine material. However, one drawback is that its high hygroscopic properties must be considered during design.

- It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).
- Continuous use temperature 70°C
- Combustiblensess UL94 V-2

PA12 [Polyamide 12 (12 Nylon)]

It has lower melting point and water absorption rate compared to Nylon6 and Nylon66. Moreover, it has excellent impact resistance and lowest density among all polyamides.

POM [Polyacetal]

POM (polyacetal) is a crystalline engineering plastic. It has balanced mechanical properties and excellent fatigue resistance, creep resistance, friction and abrasion resistance and chemical resistance. Therefore, it is widely used in fields like electrical machineries, automobiles, machineries and construction in place of metals.

It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

- Continuous use temperature 95°C
- Combustiblensess UL94 HB

PS [Polyslider]

Polyslider is manufactured by uniformly distributing graphite particles in the composition using excellent properties of polyamide such that the floating graphite particles form oblate graphite layer on the tape surface. There is almost no creep deformation due to surface pressure, and it has excellent creep resistance, friction and abrasion characteristics. It is used as thrust washer in various equipment parts.

- It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).
- Continuous use temperature 65°C

·Combustibleness UL94 HB

PO [Polysoul]

Polysoul is interlinking material of rolling extension nylon sheet, and it is oil-less lubricant with oil bearing film surface. It has excelled abrasion resistance and very little creep deformation. It supports high speed and high load, it is thin and light weight and has 4 salient features. It is suitable for places, "which can not be exposed to oil", "which require some sliding", "which can not be maintained". It is used as thrust washer in various equipment parts.

·It does not contain any of the 6 substances restricted by RoHS. (Lead, cadmium, mercury, hexavalent chrome, PBB, PBDE).

·Continuous use temperature 65°C

·Combustibleness UL94 HB

PI [Polyimide]

Polyimide has excellent heat resistance, excellent abrasion and wear resistance and friction performance under high pressure and high speed scraping, low outgas properties under high vacuum state, excellent chemical resistance and machine characteristics, extraordinary dimensional stability (no melting point and glass transition point), as well as low electrical conductivity.

·Temperature for continuous use 300°C

·Combustibleness V-0