

# POLYMER SPECIALIST

TWO H Chem's custom polymer materials are the ideal partners in the constructions, automobile, electrics & electronics, paints, coatings, textiles and pipe industries. We provide specialized technology and products for top-notch performance to assist you.

Your TWO H Chem



## POLYMER MICRO POWDERS

TWO H Chem



## SPECIAL COMPOUNDS

TWO H Chem



PE Powders | PP Powders | PO Powders | PES Powders | XLPS Powders



## POLYMER MICRO POWDERS

- Micro powders
- Thermoplastic powder coatings
- Non-Slip powder additives

TWO H Chem produces high-performance polymer micro powders with various particle sizes based on special polymerization and grinding processes using material such as polyethylene, polypropylene, polyolefin, polyester, polystyrene etc and their modified. Adding / mixing / coating in your base materials with our high performance polymer powders offer unique properties.

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## Additives for SMC / BMC



### High Density Polyethylene(HDPE) Micro Powder

**FIPOLDER** is a high density polyethylene (HDPE) polymer in fine particle powder form. Unlike waxes, these higher molecular weight materials exhibit high toughness.

- Main application of FIPOLDER
  - Low shrinkage agent, lubricant for SMC / BMC (shrink-reducing, highly flat surface)
  - Anti blocking agent for plastic-elastomer blends
- Representative grade : FHP05040



### Cross-Linked Polystyrene(XLPS) Micro Powder

**CS Series**™ cross-linked polystyrene fine powder is a copolymer of polystyrene that is transparent, rigid and exhibits excellent dimensional stability.

**CS Series**™ is a spherical fine powder form to serve as an effective component in SMC / BMC as well as paint and coating formulations.

- Applications
  - Low shrinkage agent for high-end SMC / BMC
- Representative grade : XPF0100S

## Coating powders for LCD diffuser & reflector sheet

**SCATER**™ is used as a coating powder on the surface of diffuser sheet and reflector sheet in LCD Module due to its transparency and higher levels of luminance effect. Mainly used as a surface modifying agent for diffuser sheet due to its excellent abrasion resistance and softness softer than PMMA particle, **SCATER**™ can also be applied for coating powder of reflector sheet.

**SCATER**™ is a thermoplastic polymer in fine particle powder form.

- Representative grade : TCP5010

Product	Application	Feature
SCATER™	Display module of TV, PC monitor, notebook, tablet PC - Coating of diffuser sheet - Coating of reflector sheet	<ul style="list-style-type: none"> <li>• Good softness better than PMMA</li> <li>• Excellent abrasion resistance</li> </ul>

# THERMO-PLASTIC POWDER COATINGS



### Thermoplastic adhesive powder for metal coating

**NOVA-P**™ products are high performance metal coating powder, based on **modified polyolefin with polarity groups**. They have been specifically designed to provide a strong bonding, long lasting for metal in exterior applications on steel and aluminum. This coating powder has excellent adhesive strength to the metal substrate without any primer. The material also provides good abrasion and impact resistance.

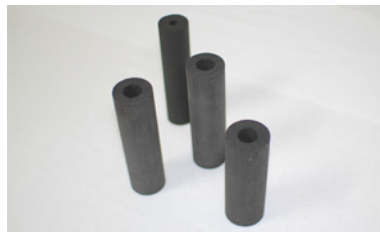


### 3 layer coating system for oil & gas line pipe

**NOVA-P**™ thermoplastic adhesive powder is used as a tie-layer in 3 layer steel pipe coating systems. **NOVA-P**™ offers optimal adhesion properties for multi-layer polyethylene coating systems.

- Representative grade : APR2511P

## Polymer powder binder



### SP Series™

**SP Series™** is well suited for filter applications of water, chemical and gas. It can be a filter by sintering itself or is used as a binder for activated carbon filter.

**SP Series™** is a ultra high molecular weight polyethylene (UHMWPE) in fine powder form. These unique material exhibit very high toughness. **SP Series™** is pure polyethylene, so has broad regulatory compliance and contain no residual chemicals or additives that may interfere with some application.

- Application of SP series™
  - Activated carbon filters
  - Sintered filters
- Representative grade : SHP2500-1

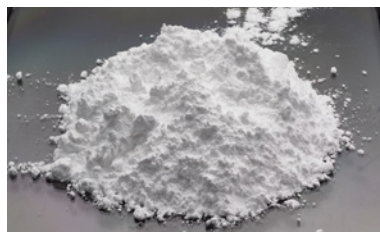


### EPOLDER™

**EPOLDER™** polyethylene microparticle powder is used as a binder in the manufacture of the alkaline battery cathode rings.

**EPOLDER™** IN ALKALINE-MANGANESE-BATTERIES

## PP micro powder



**PROPOLDER™** is polypropylene fine powder.

**PROPOLDER™** has two kinds of base resin and various particle size ranges for special applications.

**FPP Series** : PP Homopolymer Micro Powder

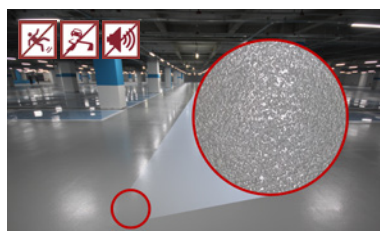
**PROPOLDER™** FPP Series is PP homopolymer in fine powder form. Unlike waxes, these higher molecular weight polymer exhibit high toughness.

- Representative grade : FPP4010

**MPP Series** : MAH Modified PP Homopolymer Micro Powder  
**PROPOLDER™** MPP Series is maleic anhydride modified PP homopolymer in fine powder form. Unlike waxes, these higher molecular weight polymer exhibit high toughness.

## NON-SLIP POWDER ADDITIVES

**FloorGrain™** thermoplastic high molecular weight polymer powders are designed as an additive in **paints** and **coatings** for high performance flooring coating applications. This unique very high molecular weight polymer powder exhibits exceptional mechanical toughness & chemical resistance. **FloorGrain™** can be used in wide variety of painting systems such as epoxy, polyurethane, acrylic and water borne paint formulations.



### Key benefits

- Non-Slip effect
- Anti-Noise effect that eliminates tire squeal
- Excellent abrasion resistance & extended coating life
- Matte finish & easy to clean
- Cost saving

### Broad & various applications

- Parking garages & heavy duty industrial floor
- Outdoor & indoor floor
- Swimming pool & bathroom's floor
- Kitchen floor
- Gas station floor
- Marine & ship's floor, stairs and deck

- Representative grade
- SHP4080-1 (Medium)
- SHP1530-1 (Extra Large)



## **SPECIAL COMPOUNDS**

- Polyolefin adhesive resins
- Compatibilizer
- Flame retardant compounds

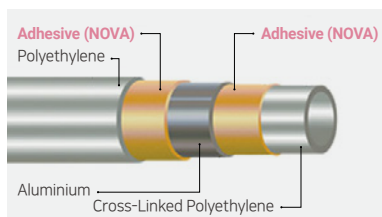
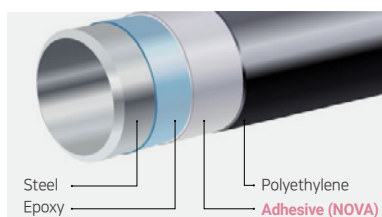
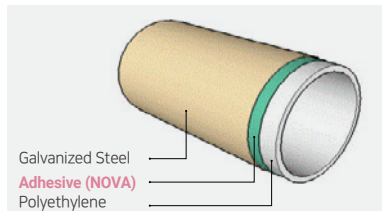
TWO H Chem's special compound products fulfill customer's needs in the application of composite pipe & panel, electrics & electronic products, oil & gas steel pipe and other industrial areas.

# POLYOLEFIN ADHESIVE RESINS

## Tie layer for composite pipe / panel / tube

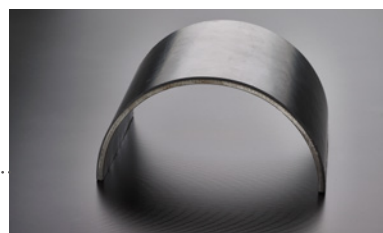
Increasing number of life styles and growing consumption of plastics require more kinds of composite materials. To meet these requirements, materials have to be modified in proper ways such as grafting. TWO H Chem's adhesive resin, **NOVA™**, in spite of its adhesive property and polarity gained through grafting, still maintains basic properties of polyolefin resins.

### Tie layer for composite pipe



### PE lined steel pipe

- Usage
  - Adhesive layer between PE / Steel
- Features
  - Uniform internal bonding
  - Excellent long term adhesion durability
- Representative grade : AP150, AP190S



### PE coated steel pipe

- Usage
  - Adhesive layer between PE / Epoxy
- Features
  - Excellent corrosion resistance
  - Advanced adhesion to substrates and top coat
- Representative grade : APR2511



### Aluminum composite pipe

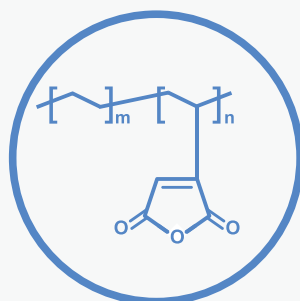
- Usage
  - Adhesive layer between PE / Aluminum / PEX
- Features
  - Excellent long term adhesion durability
- Representative grade : ALP0302



### Multi layer container

- Usage
  - Adhesive layer between PE, PET / Nylon, EVOH
- Features
  - Excellent long term adhesion durability
- Representative grade : AB130

# COMPATIBILIZER



Compatibilizer & coupling agent  
for compounding  
Mixed plastics recycle  
LFT & GMT

### Maleic anhydride modified polyolefin

Maleic anhydride grafted thermoplastic copolymers provide a very effective means to alter the dissimilar phases and enhance the physical, thermal and optical properties of the polymer blend. The main markets of compatibilizer are plastics compounding and recycle industries of mixed plastics.

**NOVACOM™ & NOVACOM-P™** are specifically designed to provide compatibility and act as the coupling agent for melt blends of polyethylene and polypropylene with inorganic fillers or additives, fiberglass, wood flour, natural fibers, paper fiber and other materials.

**NOVACOM™ & NOVACOM-P™**  
MAH modified HDPE in pellet/powder form  
MAH modified Homo/Block PP in pellet/powder form  
※ MAH : Maleic anhydride

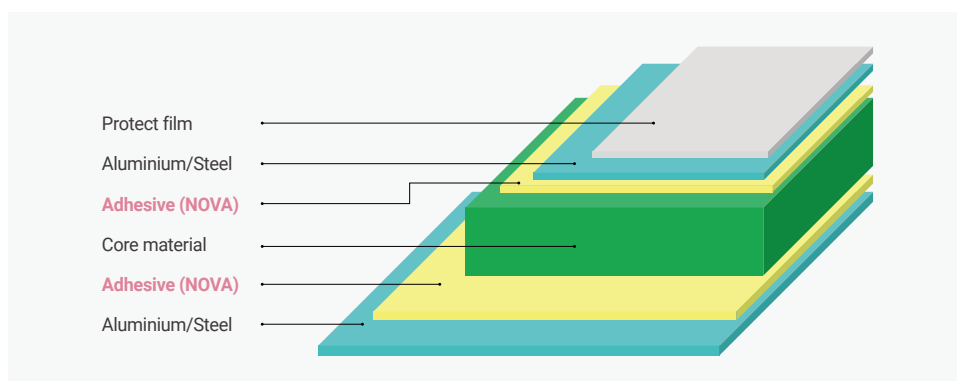
- Representative grade : HFS0100, HFS2100

**NOVA™** has an advanced functional monomer to improve adhesive strength.

Polyolefin modified adhesive resin, **NOVA™**, serves as tie layer between different materials and make high functional multi layer structures possible.

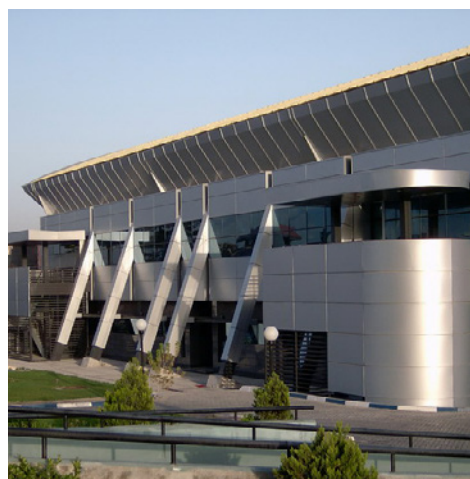
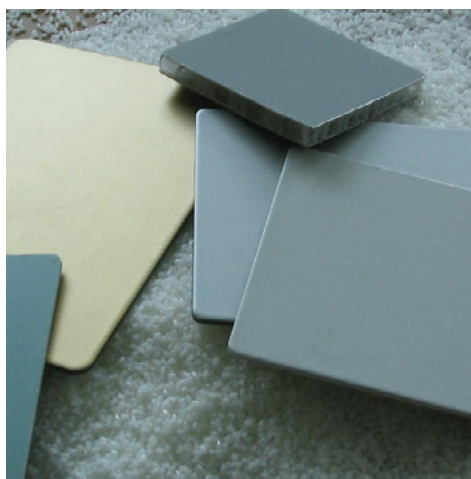
**NOVA™** is especially suitable for multi layer sheet / film / tube / pipe / panel and co-extrusion of various polymer resins with aluminum, steel and other materials.

## Tie layer for composite panel



- Usage
  - Adhesive layer between core material and Aluminum/Steel

- Features
  - Excellent long term adhesion durability
  - Representative grade : ALP0708, ALP2030JS



Aluminum composite panel(ACP) is mainly composed of Aluminum / Adhesive / FR polyethylene. Adhesive resin should have a powerful adhesion strength which can not be separated as outdoor and indoor construction material.

## FLAME RETARDANT COMPOUNDS



Flame retardant(FR) compounds are non-halogenated FR compounds including polyolefin resin and inorganic fillers. FR compounds also offer excellent flame retardance and mechanical property. In addition, they have a good extrusion workability (single extruder) and adhesion property.

### Properties

- UL 94 (V-0)
- Single extrusion workability
- Availability in pellet compounds
- Non-halogen type
- Standard and customized formulations

### Applications

- Core material for aluminum composite panel
- Versatile flame retardant building materials
- Representative grade : HFC5320

# Application of TWO H Chem`s special high performance polymer

## Electronics / Appliances

- Permanent antistatic film
- LCD diffuser & reflector sheet surface modifying agent
  - Binder for filter
  - Binder for battery



## Automotive

- Adhesive sheet for interior
- Polymer adhesive film
- Secondary battery material



## Construction

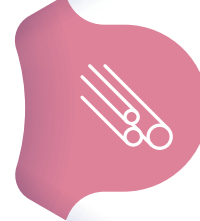
- Additive for SMC / BMC
- Adhesive resin / film



 **TWO H Chem**

## Composite Pipe / Panel

- Adhesive resin/film/powder
- Thermoplastic powder coatings
- Flame retardant compound



## Compatibilizer

- Compounding for coupling agent
  - Mixed plastic recycle
  - LFT & GMT



## Paints

- Non-Slip powder additive for floor paints & coatings
- Thermoplastic powder coating



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### For further information, please contact us

TWO H Chem offers a wide range of polymer products based on many different polymer. Do not hesitate to contact us to discuss your specific requirements.