



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Intermediate for nickel plating

### Chloral hydrate (TCA)

**Intermediate for nickel plating and pharmacy BP98 and USP24**

- 1) CAS NO. 302-17-0
- 2) Appearance White clear crystal
- 3) Content  $\geq 99\%$
- 4) Chloride  $\leq 0.01$
- 5) PH 4-6
- 6) Water-solubility Clear
- 7) Chloral Alcoholize No deposit with 1 hour
- 8) Residue after burning  $\leq 0.1\%$

Application : For pharmacy, it can be used as a hypnotic drug and an anti-eclampsia drug.

For electroplating industry used to adjust the electronic potential difference in semi-bright nickel plating ; it can affectively remove the active sulfur in the bath, and improve the electronic potential difference.

### Pyridinium hydroxy propyl sulfobetaine (PPS-OH)

**Intermediate for nickel plating**

- 1) CAS NO. 3918-73-8
- 2) Molecular Weight 217.3
- 3) Molecular Formula  $C_8H_{11}NO_4S$
- 4) Appearance Clear colorless to yellowish liquid
- 5) Assay(%) 40/45
- 6) Application High leveling agent for nickel plating, (specially suitable for high and medium current density area)

### Sodium allyl sulfonate (ALS)

**Intermediate for nickel plating**

- 1) CAS NO. 2495-39-8
- 2) Molecular Weight 144.1
- 3) Molecular Formula  $C_3H_5NaO_3S$
- 4) Appearance clear colorless to yellowish liquid
- 5) Assay(%) 25/35
- 6) Application Auxiliary brightener, it can improve throwing power and ductility of metal.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## propynol ethoxylate (PME)

### Intermediate for nickel plating

- 1) CAS NO. 3973-18-0
- 2) Molecular Weight 101.1
- 3) Molecular Formula  $C_5H_8O_2$
- 4) Appearance Clear colorless To yellowish liquid
- 5) Assay(%)  $\geq 98$
- 6) Application Leveling agent, brightener

## Butynediol ethoxylate (BEO)

### Intermediate for nickel plating

- 1) CAS NO. 1606-85-5
- 2) Molecular Weight 174
- 3) Molecular Formula  $C_8H_{14}O_4$
- 4) Appearance Clear red-yellow to red brown liquid
- 5) Assay(%)  $\geq 98$
- 6) Application Lasting brightener, weak leveling agent

## Propargyl alcohol propoxylate (PAP)

### Intermediate for nickel plating

- 1) CAS NO. 3973-17-9
- 2) Molecular Weight 114
- 3) Molecular Formula  $C_6H_{10}O_2$
- 4) Appearance clear colorless to yellowish liquid
- 5) Assay(%)  $\geq 98$
- 6) Application Leveling agent, brightener

## Cformaldehyde sodium bisulfite addition compound (PN)

### Intermediate for nickel plating

- 1) CAS NO. 870-72-4
- 2) Molecular Weight 134
- 3) Molecular Formula  $CH_3N_4O_4S$
- 4) Appearance Clear colorless Liquid
- 5) Assay(%) 28
- 6) Application It can effectively complex iso-metal ion such as Cu, Zn, Pb, co-deposition with nickel ion.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Butynediol propoxylate (BMP)

### Intermediate for nickel plating

- 1) CAS NO. 1606-79-7
- 2) Molecular Weight 202
- 3) Molecular Formula  $C_{10}H_{18}O_4$
- 4) Appearance Clear brown Liquid
- 5) Assay(%)  $\geq 95$
- 6) Application Lasting brightener, weak leveling agent

## Hexin-3-diol-2.5 (HD)

### Intermediate for nickel plating

- 1) Molecular Weight 114
- 2) Molecular Formula  $C_6H_{10}O_2$
- 3) Appearance yellow to yellowish liquid
- 4) Assay(%) 80
- 5) Application Leveling agent, brightener. Intermediate of Semi-bright nickel and bright nickel.

## Bis benzene sulphonylimide (BBI)

### Intermediate for nickel plating

- 1) CAS NO. 2618-96-4
- 2) Molecular Weight 297.4
- 3) Molecular Formula  $C_{12}H_{11}O_4S_2N$
- 4) Appearance White or yellowish crystal
- 5) Assay(%)  $\geq 90$
- 6) Application Sulfonyl imide compound, it has physical characteristic of sulfonyl imide, soluble in alkaline solution. In electroplating, used as primary brightener instead of saccharin, it has better leveling ability and less consumption than saccharin

## Carboxyethylisothiuronium chloride (ATP)

### Intermediate for nickel plating

- 1) CAS NO. 5425-78-5
- 2) Molecular Formula  $C_3H_7ClN_2O_2S$
- 3) Appearance White or yellowish powder
- 4) Assay(%)  $\geq 98$
- 5) Application Impurities tolerance agent, it can improve covering power at low current region.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## **S-Carboxyethylisothiuronium betaine (ATPN)**

### **Intermediate for nickel plating**

- 1) CAS NO. 5398-29-8
- 2) Molecular Formula  $C_4H_8IN_2O_2S$
- 3) Appearance White Crystal powder
- 4) Assay(%)  $\geq 98$
- 5) Application Impurities tolerance agent, it can improve covering power at low current region.

## **1-Diethylamino-2-propyne (DEP)**

### **Intermediate for nickel plating**

- 1) CAS NO. 4079-68-9
- 2) Molecular Weight 111.2
- 3) Molecular Formula  $C_7H_{13}N$
- 4) Appearance Clear colorless or yellowish liquid
- 5) Assay(%)  $\geq 98$
- 6) Application Leveling agent, brightener

## **Diethylaminopropyne formic acid (PABS)**

### **Intermediate for nickel plating**

- 1) CAS NO. 125678-52-6
- 2) Molecular Weight 157.2
- 3) Molecular Formula  $C_8H_{15}NO_2$
- 4) Appearance Clear colorless or yellowish liquid
- 5) Assay(%)  $\geq 70$
- 6) Application Leveling agent, brightener.

## **SSO3**

### **Intermediate for nickel plating**

- 1) Molecular Weight 296.2
- 2) Molecular Formula  $C_3H_6O_7S_3Na$
- 3) Appearance colorless to clear yellowish Liquid
- 4) Assay(%)  $\geq 55$
- 6) Application Impurities tolerance agent, it can improve covering power at low current region.

## **Propynesulfonic acid sodium salt (PS)**

### **Intermediate for nickel plating**

- 1) CAS NO. 55947-46-1
- 2) Molecular Weight 142.1
- 3) Molecular Formula  $C_3H_3NaO_3S$
- 4) Appearance Clear yellowish liquid
- 5) Assay(%) 25
- 6) Application Brightener, leveling agent, dispersant. impurities tolerance agent, dispersant, impurities



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Pyridinium propyl sulphobetain (PPS)

### Intermediate for nickel plating

- 1) CAS NO. 15471-17-7
- 2) Molecular Weight 201.2
- 3) Molecular Formula  $C_8H_{11}NO_3S$
- 4) Appearance white crystal powder
- 5) Assay(%)  $\geq 99$
- 6) Application strong leveling agent

## POPS

### Intermediate for nickel plating

- 1) CAS NO. 0290-53-0
- 2) Molecular Weight 200.2
- 3) Molecular Formula  $C_6H_9NaO_4S$
- 4) Appearance orange-yellow clear liquid
- 5) Assay(%)  $\geq 45$
- 6) Application Leveling agent, brightener for low current region

## Propargyl-oxo-propane 2,3-dihydroxy (POPDH)

### Intermediate for nickel plating

- 1) CAS NO. 13580-38-6
- 2) Molecular Weight 130.1
- 3) Molecular Formula  $C_6H_{10}O_3$
- 4) Appearance yellowish to clear yellow liquid
- 5) Assay(%) 50
- 6) Application Used with derivant of alcohol, synergistic bright enhance leveling improve fill up at low current region.

## Propargyl chloride

### Intermediate for nickel plating

- 1) CAS NO. 3918-73-8
- 2) Molecular Weight 71.5
- 3) Molecular Formula  $HC\equiv CCH_2Cl$
- 4) Appearance Clear colorless liquid
- 5) Assay(%)  $\geq 97$



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Intermediate for Zinc plating

### Benzlidene acetone (BAR)

#### Intermediate for Zinc plating

- 1) CAS NO. 1896-62-4
- 2) Molecular Weight 146.2
- 3) Molecular Formula  $C_{10}H_{10}O$
- 4) Appearance Colorless or light yellow solid
- 5) Assay(%)  $\geq 99$
- 6) Refractive index (20°C) 1.5840-1.5873
- 7) Melting point 39.0-41.5°C
- 8) Application Brightening agent for zinc plating as grain-fined agent.

### Benzylidene diacetone (BZA)

#### Intermediate for Zinc plating

- 1) CAS NO.
- 2) Molecular Weight 204.3
- 3) Molecular Formula  $C_{13}H_{16}O_2$
- 4) Appearance Yellowish crystal (at low temperature)
- 5) Assay(%)  $\geq 99$  (GC)
- 6) Application Can instead of BAR, high purity

### Aqueous Cationic polymer (IME)

#### Intermediate for Zinc plating

- 1) CAS NO. 68794-57-9
- 2) Appearance Yellowish aqueous solution
- 3) Assay(%) Approx. 35
- 4) Related density (20°C) 1.1-1.2
- 5) PH 5.0-7.0
- 6) Water-solubility It is quite soluble in water and methyl alcohol
- 7) Application It is a polymer of reaction product from the imidazole and the epichlorohydrin. In electroplating, it is used as primary brightener combining with BN-48, BPC-(48/34) for cyanide or alkaline cyanide-free zinc plating.

### Aqueous cationic polymer (MOME)

#### Intermediate for Zinc plating

- 1) CAS NO. 109882-76-0
- 2) Appearance Red-brown aqueous solution
- 3) Assay(%) 40
- 4) Related density (20°C) 1.1-1.2



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

5) PH 6-8

6) Water-solubility Quite soluble in water

7) Application Primarily used as brightener and carrier for alkaline cyanide and cyanide-free zinc plating, usually combining with BN-48, BPC-(48/34).

## O-Chlorobenzaldehyde (OCBA)

### Intermediate for Zinc plating

1) CAS NO. 89-98-5

2) Appearance Colorless or yellowish transparent liquid, with benzaldehyde smell.

3) Assay(%)  $\geq 99\%$

4) Related density (20°C) 1.248

5) Application It is used especially for acidic zinc plating, The important raw material for making up medicines, also widely used as raw material of insecticides of mites.

## Polyaminesulfone (PAS)

### Intermediate for Zinc plating

1) CAS NO.

2) Appearance Nearly colorless or yellowish viscous liquid

3) Assay(%) 50

5) PH 0.5

6) Level of Addition 10-100mg/L

7) Application It is mainly used as brightener, leveling agent and crystal grain refined agent in copper plating or non-cyanide zinc plating.

## 1-benzyl-3-carboxyl pyridinium chloride (BCPC)

### Intermediate for Zinc plating

1) CAS NO. 16214-95-5

2) Appearance White powder

3) Assay(%)  $\geq 95$

4) Application It is used as brightener and leveling agent for alkaline cyanide and cyanide-free Zinc plating, silver, nickel plating etc.

## Diaminoarea polymer (PUB)

### Intermediate for Zinc plating

1) CAS NO. 68555-36-2

2) Appearance Colorless to yellowish clear liquid

3) Assay(%) 60

4) Application It is a cationic surfactant of polyureylene ammonium salt, which can be used as leveling agent in alkaline zinc plating and providing a uniform distribution thickness over a wide range of current densities. In addition, it is used in cosmetics, hair, skin conditioner, cleaning composition and etc.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Carrier for high temperature (OCT-5/OCT-15)

### Intermediate for Zinc plating

- 1) CAS NO.
- 2) Molecular Weight 204.3
- 3) Molecular Formula
- 4) Appearance Yellow dope
- 5) Assay(%)  $\geq 95$
- 6) Application Combined with BZA, Carrier for the BZA

## 1-Benzyl pyridinium 3-Carboxylate (BPC)

### Intermediate for Zinc plating

- 1) CAS NO. 15990-43-9
- 2) Molecular Weight 148
- 3) Molecular Formula  $C_{13}H_{11}N + O_2$
- 4) Appearance Clear brown –yellow to brown-red liquid
- 5) Assay(%) 48.0 % / 34%
- 6) Related density (20°C) 1.09
- 7) PH 5—6
- 8) Water –solubility Quite soluble in water
- 9) Application It has bitter almond smell, As brightening agent in alkaline cyanide and cyanide-free electroplating zinc or Cadmium baths, it is preferably used in combination with IME and MOME

## Polyethyleneimine (G-35)

### Intermediate for Zinc plating

- 1) CAS NO.
- 3) Molecular Formula  $-(-CH=CH-NH-)-_n$
- 4) Appearance Colorless or yellowish viscous liquid
- 5) Assay(%) 50
- 4) PH 11-12
- 5) Level of Addition 0.5-10 mg/L
- 6) Application It is used as basic brightener ,crystal-grain refined agent to improve dispersion force in alkaline plating for zinc, copper,tin, copper-tin alloy, aluminum alloy and etc.

## Midazo lechloro hydroxy prepane (IMZE)

### Intermediate for Zinc plating

- 1) CAS NO. 68797-57-9
- 2) Molecular Weight 160.5
- 3) Molecular Formula  $C_6H_9ON_2Cl$
- 4) Appearance Yellow dope
- 5) PH 8–10
- 6) Application Leveling and brightener for alkaline Zinc





#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Hexamethylene tramine tra hydroxy propy chloride (HETM)

Intermediate for Zinc plating

- 1) CAS NO.
- 2) Molecular Weight
- 3) Molecular Formula
- 4) Appearance Yellow to brown dope
- 5) Application Brightener for alkaline Zinc, can improve the operation temperature

## Intermediate for Copper plating

### Bis-(Sodium sulfopropyl)-disulfide (SP) (SPS)

Intermediate for Copper plating

- 1) CAS NO. 27206-35-5
- 2) Molecular Weight 354.4
- 3) Molecular Formula  $C_6H_{12}O_6S_4Na_2$
- 4) Appearance White or yellowish powder
- 5) PH 3-7 (38% water solution)
- 6) Application As a brightening agent for acid copper baths for decorative and functional deposits, it is functionally compatible with most components of typical copper bath formulation such as non-ionic surfactants, polymeric amines and other mercapto compounds

### 2-Mercapto benzanidazole (M)

Intermediate for Copper plating

- 1) CAS NO. 583-39-1
- 2) Molecular Weight 150.2
- 3) Molecular Formula  $C_7H_6N_2S$
- 4) Appearance White Crystal
- 5) Assay  $\geq 95$
- 6) Application it is soluble in alkaline solution, and used as Brightener for copper plating, which can brighten and level the deposit, Furthermore, it can improve working current density. In addition, It can improve working current density, it is often combined with N, SPS.

### Etylene thiourea (N)

Intermediate for Copper plating

- 1) CAS NO. 96-45-7
- 2) Molecular Weight 102.2
- 3) Molecular Formula  $C_3H_6N_2S$
- 4) Appearance White Crystal
- 5) Solubility(20°C) Soluble in hot water
- 6) Assay  $\geq 95\%$
- 7) Application it is soluble in hot alcohol solution. It is used as brightening agent for copper plating and combined with acidic copper plating brightener M, SP and so on.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## 2-mercapto thiazoline (H1)

### Intermediate for Copper plating

- 1) CAS NO. 96-53-7
- 2) Molecular Weight
- 3) Molecular Formula  $C_3H_5NS_2$
- 4) Appearance White needle Crystal
- 5) Assay  $\geq 98$
- 6) Application It is used as main component of additive for acidic copper plating, Good brightness and level result can be obtained.

## Aqueous cross-linking polyamide JPH (EXP.2887)

### Intermediate for Copper plating

- 1) CAS NO.
- 4) Appearance Red brown liquid
- 5) Assay about 20
- 6) Application It is aqueous solution of cross-linking polyamide, primarily used for acidic copper plating bath, specially used as brightener at low current region, bright, ductile, level results can be obtained when combined with wetting agent beta-naphthol poly ethylene glycol and sulfur-containing compound such as SP, PPS, etc.

## N,N,N,'N'tetrakis (2-hydropropyl) ethylene diamine EDTP (Q75)

### Intermediate for Copper plating

- 1) CAS NO.
- 3) Molecular Formula  $C_{14}H_{32}N_2O_4$
- 4) Appearance Clear colorless liquid
- 5) Assay  $\geq 75$
- 6) Application It is soluble in water easily, its aqueous solution is weak alkaline, primarily used as complexing agent for chemical Copper plating.

## 3-S-thiuronium propyl sulfonate (UPS)

### Intermediate for Copper plating

- 1) CAS NO. 21668-81-5
- 2) Molecular Weight 198.2
- 3) Molecular Formula  $C_4H_{10}N_2O_3S_2$
- 4) Appearance White powder
- 5) Application Used for deposition of bright, ductile copper coatings in combination with polyethylene glycols and non-ionic surfactants. Also can be used in acid electroplating baths for silver and palladium deposition.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## **N,N-Dimethyl-dithiocarbamyl propyl sulfonate (DPS)**

### **Intermediate for Copper plating**

- 1) CAS NO. 18880-36-9
- 2) Molecular Weight 265.4
- 3) Molecular Formula  $C_6H_{12}NNaO_3S_3$
- 4) Appearance White Crystal
- 5) Assay  $\geq 98\%$
- 6) Application It is used as brightener agent in acid copper baths and can get a bright and ductile deposit when used together with polyether and wetting agents.

## **3-(Benzothiazolyl-2-mercapto)-propyl-sulfonate (ZPS)**

### **Intermediate for Copper plating**

- 1) CAS NO. 49625-94-7
- 2) Molecular Weight 311.4
- 3) Molecular Formula  $C_9H_{10}NNaO_3S_2$
- 4) Appearance Yellow powder
- 5) Assay  $\geq 90$  (UV)
- 6) Application it is used as brightener agent in acid copper plating and has an effect of depositing a bright and ductile coating together with polyethers and wetting agents, for the chemical, deposition of precious metals, in addition, it is used as a stabilizer to prevent wild deposition.

## **1-Propanesulfonic acid,3-mercapto-monsodium salt (MPS)**

### **Intermediate for Copper plating**

- 1) CAS NO. 17636-10-1
- 2) Molecular Weight 178.7
- 3) Molecular Formula  $C_3H_7O_3S_2Na$
- 4) Appearance White powder
- 5) Assay  $\geq 85\%$
- 6) Application In the electroplating industry MPS serves as a brightening agent in acid copper baths to improve the deposition of copper coatings for decorative and functional purposes. The use of MPS together with polyethers and non-ionic surfactants results in brilliant and ductile coatings, An additional combination with polymeric amines, dyestuffs and other thio compounds is possible as well.



#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA  
TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070

---

## Other electroplating intermediate

### 1,3-propane sultone (1,3 PS)

- 1) CAS NO. 1120-71-4
- 2) **Water-solubility** Hardly soluble in water
- 3) **Molecular Formula**  $C_3H_6O_3S$
- 4) **Appearance** Colorless or yellowish transparent liquid ( $\geq 31^\circ C$ )  
Colorless and transparent crystalline. ( $< 31^\circ C$ )
- 5) **Assay**  $\geq 99\%$
- 6) **Application** It is an important chemical intermediates that used as the starting material for many electroplating chemical intermediates, sensitizing dye anionic Gemini surfactants. In addition, it is used into secondary lithium ion solution to improve recycling life .

### 1, 4-butane sultone

- 1) CAS NO. 1633-83-6
- 2) **Water-solubility** Hardly soluble in water
- 3) **Molecular Formula**  $C_4H_8O_3S$
- 4) **Appearance** Colorless to yellowish transparent liquid
- 5) **Assay**  $\geq 99\%$
- 6) **Application** It is the homologue of 1,3-propane sultone ,and both of them are main chemical intermediates, which is used the synthesis of sensitizing dyes, anionic Gemini surfactants, and secondary lithium ion solution

### Propargyl chloride

- 1) CAS NO. 624-65-7
- 2) **Water-solubility** Little soluble in water
- 3) **Molecular Formula**  $C_3H_3Cl$
- 4) **Appearance** colorless and transparent liquid
- 5) **Assay** 97% / 65%
- 6) **Application** As a propargyl precursor, it is used many kinds of synthesis and pharmaceutical and electroplating chemical intermediates. In addition, it is a good corrosion inhibitor and antirust.

### Propargyl amine

- 1) CAS NO. 2450-71-7
- 2) **Water-solubility** Quite soluble in water
- 3) **Molecular Formula**  $C_3H_5N$
- 4) **Appearance** Colorless to yellowish liquid
- 5) **Assay** 95%
- 6) **Application** pharmaceutical intermediates

## Organic fluoro-containing chemicals

### FC-134

CAS.: 1652-63-7

- 1) Chemical name : N,N-dimethyl,3-perfluorooctylsulfonylpropyl-aminium, iodide
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NHCH}_2\text{CH}_2\text{N}^+(\text{CH}_3)_3\text{I}^-$
- 3) Molecular formula:  $\text{C}_{14}\text{H}_{16}\text{F}_{17}\text{IN}_2\text{O}_2\text{S}$
- 4) Molecular weight: 725.9
- 5) Appearance : Yellowish powder
- 6) Water solubility: The aqueous solution at one percent concentration can form gelatin
- 7) Surface tension : 17mN/m (1% aqueous solution)
- 8) Application : It is a cation surfactant and keeps good ability in lowering the surface tension no matter in acid, alkaline and neutral medium .

It is also used as wetting agent, spreading agent, equalizing agent, light water extinguisher, film coating agent , welding auxiliary agent for electronic crest , and also drainage and anti-oil , anti-water, and anti-dirt for fiber, paper and leather making.

Package : 500g  $\times$  20bottle/per box

### FC-154, FC-921

- 1) Chemical name : N,N-dimethyl,3-perfluorooctylsulfoaminopropyl-amminium,acetate
- 2) structure formula:  $\text{C}_8\text{F}_{17}\text{SO}_2\text{NHCH}_2\text{CH}_2\text{CH}_2\text{N}^+(\text{CH}_3)_2\text{CH}_2\text{COO}^-$
- 3) Molecular formula:  $\text{C}_{15}\text{H}_{15}\text{F}_{17}\text{N}_2\text{O}_4\text{S}$
- 4) Molecular weight: 642
- 5) Appearance : White or yellowish powder
- 6) Surface tension : 18-19mN/m
- 7) Application : It is an amphoteric surfactant, and can greatly low surface tension of aqueous solution so that is widely used as collecting agent in petroleum, extinguishing additive in fire control, emulsifier and dispersing agent in daily industry, aid in resin, fiber and leather processing.

Package : 500g  $\times$  20bottle/per box

### FC-9

CAS.: 4151-50-2

- 1) Chemical name : N-ethyl,perfluorooctylsulfonylamide
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NHCH}_2\text{CH}_3$
- 3) Molecular formula:  $\text{C}_{10}\text{H}_6\text{F}_{17}\text{NO}_2\text{S}$
- 4) Molecular weight: 527
- 5) Appearance : White or yellowish waxy solid
- 6) Assay : 95%
- 7) Melting Point : 88-90°C
- 8) Application : It is a perfluoro anion surfactant the the important intermediate for perfluoro surfactants. In addition, it is an excellent pesticide and good



**#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA**  
**TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070**

---

At killing some insects such as curing ant, cockroach, and other reptiles.

Package : 500g~~×~~20bottle/per box

## FC-8

CAS.:307-35-7

- 1) Chemical name : perfluorooctylfluoride
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{F}$
- 3) Molecular formula:  $\text{C}_8\text{F}_{18}\text{O}_2\text{S}$
- 4) Assay:  $\geq 90\%$
- 5) Appearance : colorless and transparent liquid
- 6) Related density: 1.81-1.85
- 7) PH value : 3—4
- 8) Application : It is the starting materials for the preparation of many fluoro-containing surfactants, which is widely used in the technological fields of textile, leather, paper making, ore dressing, pesticide, electroplating additive, oil field, fire control, photosensitive and synthetic materials, and can meet the special functional requests of different applied fields.

Package : 500g~~×~~20bottle/per box

## FC-95

CAS.:2795-39-3

- 1) Chemical name : Potassium perfluorooctylsulfonate
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_3\text{K}$
- 3) Molecular formula:  $\text{C}_8\text{F}_{17}\text{SO}_3\text{K}$
- 4) Molecular weight: 538
- 5) Appearance : White or yellowish crystalline powder
- 6) Assay :  $\geq 98\%$
- 7) Decomposed temperature :  $390^\circ\text{C}$
- 8) Surface tension: 22mN/m
- 9) Application : It is perfluoro anion surfactant which mainly used as chrome fog depressant and wetting agent for electroplating and additive in fluoro protein fire foam fighting.

Package : 500g~~×~~20bottle/per box

## FC-10

CAS.:1691-99-2

- 1) Chemical name : N-ethyl-N-perfluorooctylsulfonylaminoethanol
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{N}(\text{C}_2\text{H}_5)\text{CH}_2\text{CH}_2\text{OH}$
- 3) Molecular formula:  $\text{C}_{12}\text{H}_{10}\text{F}_{17}\text{O}_3\text{NS}$
- 4) Appearance : Under room temperature , it is white or yellowish waxy solid and turned into amber liquid after being melted.
- 5) Melting Point :  $55-65^\circ\text{C}$
- 6) Related density @ $80^\circ\text{C}$  : 1.71g/ml
- 7) Assay :  $\geq 95\%$



**#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA**  
**TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070**

---

- 8) Application : It is a kind of nonionic fluoro-containing and the intermediate preparing various of fluoro-containing surfactants and surface treating agent. In addition the important material synthesizing perfluoro alkyl acrylate

Package : 500g×20bottle/per box

## FC-120

- 1) Chemical name : Ammonium perfluorooctylsulfonate
- 2) structure formula:  $\text{CF}_3(\text{CF}_2)_7\text{SO}_3\text{NH}_4$
- 3) Molecular formula:  $\text{C}_8\text{H}_4\text{F}_{17}\text{O}_3\text{NS}$
- 4) Appearance : Colorless or yellowish powder
- 5) Molecular weight: 538
- 6) Assay :  $\geq 98\%$
- 7) Application : It is a kind of perfluoro anion surfactant and can be used as wetting agent, leveling agent and abluent in coating. The reference usage is 0.1-0.01%.

Package : 500g×20bottle/per box

## FC-2

- 1) Chemical name : Specila fluoro-containing surfactants
- 2) Appearance : Yellow transparent liquid
- 3) PH value : 7-8
- 4) Related density 20°C : 1.157
- 5) Melting point: -4°C
- 6) Surface tension 20°C: 16.8mN/m (0.1% aqueous solution )
- 7) Assay :  $\geq 80\%$
- 8) Application : It is made up of perfluoro nonionic surfactant and perfluoro cation water extinguishing additive in fire control, oil additive in petroleum, additive in nickel plating and zinc plating. When clearing electroplating element, this product can be added for removing its oil dirt effectively, promoting the wetting ability of plated elements and improving the quality of electroplating elements, it also used as equalizing agent in field of paint.

Package : 500g×20bottle/per box

## FC-922

- 1) Chemical name : Perfluoroalkylsulfonyl propyl triethyloxy silicane
- 2) structure formula:  $\text{C}_8\text{F}_{17}\text{SO}_2\text{NH CH}_2\text{CH}_2\text{CH}_2\text{Si}(\text{OCH}_2\text{CH}_3)_3$
- 3) Molecular formula:  $\text{C}_{17}\text{H}_{22}\text{F}_{17}\text{O}_5\text{NSSi}$
- 4) Appearance : Yellowish transparent liquid
- 5) Molecular weight: 703.1
- 6) Refractive index 20°C: 1.382 (30%)
- 7) Assay :  $\geq 30\%$
- 8) Application : Fiuosilicate easily forms a membrane in air, so it is widely used as anti-oil, anti-water, anti-dirt in fields of glass, ceramics, leather fibre, also as demoulding agent and permanent anti-dirt flash paint for WF insulator.

Package : 500g×20bottle/per box

## **FC-401**

CAS.: 375-75-4

- 1) Chemical name : perfluorobutylsulfonylfluoride
- 2) Appearance : colorless and transparent liquid
- 3) Boiling Point : 65-66°C
- 4) Related density @80°C : 1.700-1.750
- 5) Assay : ≥95%
- 6) PH Value : 3.8-4.8
- 7) Application : It is the homologue of perfluorooctylsulfonylfluoride and can be used to synthesize various of special perfluoro surfactants. Its potassium salt is an excellent anion surfactant and fire retardant for polycarbonate.

Package : 500g×20bottle/per box

## **FC-98**

CAS.: 2795-39-3

- 1) Chemical name : Potassium perfluorobutylsulfonate
- 2) Appearance : White or yellowish powder
- 3) Decomposition temperature : 300°C
- 4) Assay : ≥95%
- 5) PH Value : 5-7
- 6) Application : It is a kind of perfluoro anion surfactant and has the general characters of fluoro surfactant. It is widely used as inflaming retardant for synthetic materials, especially for polycarbonate.

Package : 500g×20bottle/per box

## **FC-1890**

Function : Lasting chrome fog inhibitor

Appearance: White or yellowish powder

Assay : 98% (min)

- Property:
1. good water solubilizing, it can dissolve in 50% water.
  2. low surface tension with small quantity (250mg/kl=22.16mN/m)
  3. sustaining under the working condition, it can dissolve in dielectric quickly with high current density.
  4. depressant forms a thin foam layer on surface of cell liquor, it seems that the additional filter can effectively stop acid fog from overflowing to produce ringing.
  5. overcome the effect of other chrome-fog depressant to degree of finish of chrome-plating, and make the finish degree of surface much more higher.
  6. it can drop from chrome-plating layer quickly and greatly reduce the loss of work belt output, so the effecting time becomes longer.

Package : 500g×20bottle/per box

## **FC-807**





**#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA**  
**TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070**

---

Chemical name : Perfluoro alkyl phosphate

Molecular formula:  $C_{17}H_{22}F_{17}O_5NSSi$

Appearance : Brown waxy solid

Molecular weight: 1246

PH Value : 2--3

Applicaton : It is a kind of perfluoro nonionic surfactant and widely used in paper Management, processing of resin, fibre and leather, especially in paper reinforcing, it has good effects as oil, water and dirt proofing. Reference usage is about 3%

Package : 500g  $\times$  20bottle/per box

## FC-248

Chemical name : Tetraethylammonium perfluorooctanesulfonate

structure formula:  $CF_3(CF_2)_7SO_3^-(C_2H_5)_4N^+$

Molecular formula:  $C_{16}H_{20}F_{17}NSO_3$

Appearance : White powder

Molecular weight: 629

Refractive index 20°C: 1.382 (30%)

Assay :  $\geq 90\%$

Package : 500g  $\times$  20bottle/per box

## FC-43

CAS.: 311-89-7

Chemical name : perfluorotributylamine

structure formula:  $(C_4F_9)_3N$

Molecular formula:  $C_{12}F_{27}N$

Appearance : Colorless and odorless transparent liquid. It is nonflammable and keep stability to heat, and many chemicals. It has excellent lubricating quality and dielectric properties.

Boiling Point : 165-185°C

Related density @80°C : 1.85-1.89

Dielectric strength : 17(kv/mm) (min)

Applicaton : 1. As a anticorrosive driving isolating liquid for apparatus & Instruments.

2. As a dielectric insulating oil.

3. Stable diluent specific solvent or reagent for chemical reaction.

4. Thermoconducting cooling agent used for transformer, Particularly small transformer for tall & big buildings.

5. Oxidation-resistant lubricant.

6. Fluorocarbon emulsion used as blood substitute.

7. Leak detecting liquid of electronic devices

Package : 500g  $\times$  20bottle/per box

## FC-99

CAS.: 754-91-6

Chemical name : perfluorooctylsulfoamide

structure formula:  $CF_3(CF_2)_7SO_2NH_2$



**#808, HANSHIN B/D, 136-1, MAPO-DONG, MAPO-GU SEOUL 121-736, KOREA**  
**TEL: +82 2 6351 7700 FAX: +82 2 6351 7800 MOBILE: +82 10 3366 0070**

Molecular formula:  $C_8F_{17}SO_2NH_2$

Appearance : White or yellowish waxy solid

Assay : 95% (min)

Applicaton : It is used for synthesis of fluoro-containing surfactants, electroplating additive, etching agent for metal and plastic.

Package : 500g  $\times$  20 bottle/per box

## inorganic fluoro-containing chemicals

| Chemical name                  | Molecular formula | CAS.#      | Assay  | Package     |
|--------------------------------|-------------------|------------|--------|-------------|
| <b>sodium bifluoride</b>       | $NaHF_2$          | 1333-83-1  | 98%    | 25 kg/piece |
| <b>ammonium bifluoride</b>     | $NH_4HF_2$        | 1341-49-7  | 97%    | 25 kg/piece |
| <b>Ammonium fluoride</b>       | $NH_4F$           | 12125-01-8 | 97%    | 25 kg/piece |
| <b>Potassium fluoride</b>      | $KF$              | 13455-21-5 | 98%    | 25 kg/piece |
| <b>hydrofluoride</b>           | $HF$              | 7664-39-3  |        | 25 kg/piece |
| <b>fluoboric acid</b>          | $H_2BF_4$         | 16872-11-0 | 49.50% | 25 kg/piece |
| <b>lead fluoborate</b>         | $PbBF_4$          | 13814-96-5 | 28%    | 25 kg/piece |
| <b>stannous fluoborate</b>     | $SnBF_4$          | 237-487-6  | 20.30% | 25 kg/piece |
| <b>sodium fluoborat</b>        | $Na_2BF_4$        | 13755-29-8 | 98%    | 25 kg/piece |
| <b>potassium fluoborate</b>    | $K_2BF_4$         | 14075-53-7 | 98%    | 25 kg/piece |
| <b>fluosilicic acid</b>        | $H_2SiF_4$        | 16961-83-4 | 29-32% | 30 kg/piece |
| <b>sodium fluosilicate</b>     | $Na_2SiF_4$       | 16893-85-9 | 98%    | 50 kg/piece |
| <b>potassium fluosilicate</b>  | $K_2SiF_4$        | 16871-90-2 | 98%    | 25 kg/piece |
| <b>ammonium fluosilicate</b>   | $NH_4SiF_4$       | 62449-69-8 | 98%    | 25 kg/piece |
| <b>fluotitanate acid</b>       | $H_2TiF_4$        |            |        | 25 kg/piece |
| <b>potassium fluotitanate</b>  | $K_2TiF_4$        | 16919-27-0 | 98%    | 25 kg/piece |
| <b>sodium fluotitanate</b>     | $Na_2TiF_4$       |            |        | 25 kg/piece |
| <b>magnesium fluotitanate</b>  | $MgTiF_4$         |            |        | 25 kg/piece |
| <b>sodium fluoaluminate</b>    | $Na_3AlF_6$       | 15096-52-3 | 53%    | 25 kg/piece |
| <b>potassium fluozirconate</b> | $K_2ZrF_6$        | 16923-95-8 |        | 25 kg/piece |