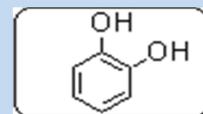


## Electronic Materials

### \* High purity catechol

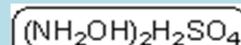
High purity catechol is used as a semiconductor photoresist remover or stripper with a very low metal content.



CAS 120-80-9, MITI 3-543, EINECS 204-427-5, TSCA registered

### \* High purity hydroxylamine sulfate (High purity HAS)

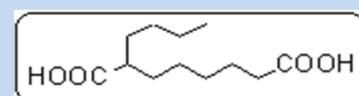
High purity HAS is used as a semiconductor photoresist remover or stripper certified for extremely low metal content (Na, Ca; less than 100 ppb; Fe, less than 50 ppb; Mg, Ni, Cr, K, Mn, Cu, Pb, Al, less than 30 ppb).



CAS 10039-54-0, MITI 1-375, 1-430, EINECS 233-118-8, TSCA registered

### \* 2-Buthyloctanoic acid (1,6-DDA)

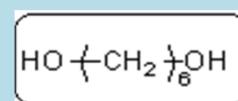
1,6-DDA is used as a raw material for the making the electrolytes used in aluminum electrolytic capacitors.



CAS 50905-10-7, MITI 2-878, EINECS (not registered), TSCA registered

### \* 1,6-Hexanediol

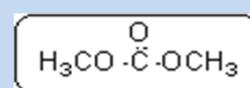
1,6-Hexanediol is a valuable intermediate used in the synthesis of specialty chemicals and has applications in manufacturing a variety of polymers, such as polyurethanes, polyesters, and Polycarbonatediol. The configuration of 1,6-hexanediol, which contains terminally located hydroxyl groups, results in rapid and simultaneous reactions in the formation of numerous di-substituted products.



CAS 629-11-8, MITI 2-240, EINECS 211-074-0, TSCA registered

### \* Dimethyl carbonate (DMC)

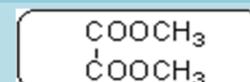
Widely used as electrolytes in lithium ion batteries, organic solvents and valuable intermediates for the chemical industry, DMC is produced from methanol and carbon monoxide using UBE's original nitrite technology.



CAS 616-38-6, MITI 2-2853, EINECS 210-478-4, TSCA registered

### \* Dimethyl oxalate (DMO)

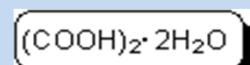
DMO is a raw material used for making etching agents, and is produced from methanol and carbon monoxide using UBE's original nitrite technology.



CAS 553-90-2, MITI 2-924, EINECS 209-053-6, TSCA registered

### \* Oxalic acid

Oxalic acid is used as a raw material for manufacturing etching agents, extractants for rare-earth metals, catalysts for phenol resins, metal polishers, ink erasers, and intermediates of pharmaceuticals and dyes. Other applications for oxalic acid include alumite processings, synthesis of maltose and glucose by hydrolysis of starch, and purifications of glycerol and stearic acid. Oxalic acid is produced by using UBE's original CO coupling reaction.

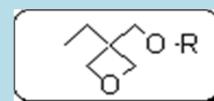


CAS 144-62-7, MITI 2-844, EINECS 205-634-3, TSCA registered

## Electronic Materials

### \* Oxetane

Oxetane derivatives are used as photoresists, resin moldings, and underfill moldings, offering a unique alternative to using epoxy resins for electronic materials.



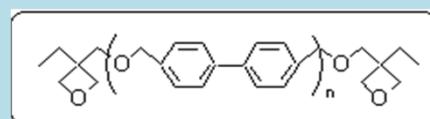
CAS 3047-32-3, MITI 5-6621, EINECS 221-254-0, TSCA registered.

CAS 358365-48-7, 63943-89-5, 37674-57-0, MITI (registration in progress)

EINECS (not registered), TSCA (not registered)

Trade name : ETERNACOLL?EHO, OXBP, OXTP, OXMA

ETERNACOLL? OXBP is used in electronic coating applications because of its rigid biphenyl structure, which provides beneficial properties including hardness, heat resistance, chemical resistance, and low water absorbency for coatings.



ETERNACOLL? OXMA is used in electronic materials because of its halogen-free properties. OXMA is a hybrid monomer with methacrylate moiety and an oxetane ring. The methacrylate moiety is curable by free radical polymerization techniques that enable OXMA to co-polymerize with various unsaturated compounds. The oxetane ring is not affected by radical polymerization

