

Serial No.	Category	Cas No.	Name	Use
1		1077-28-7/62-46-4	Alpha lipoic acid	Alpha lipoic acid is a unique anti-free radical substance and is often referred to as a broad antioxidant. It is a vitamin-like substance produced in the body. Unlike other antioxidants with special effects produced in the body, $\alpha$ -lipoic acid is neither strictly fat-soluble nor water-soluble, which allows it to promote the activity of other antioxidants in the body. Lipoic acid is also a widespread substitute when antioxidants are insufficient. For example, if the content of vitamin C and vitamin E stored in the body is low, $\alpha$ -lipoic acid can temporarily supplement them. Because alpha-lipoic acid can pass through the blood-brain barrier, it can help reverse the adverse reactions caused by stroke. Alpha lipoic acid also helps maintain the normal level of blood sugar and prevents serious complications of diabetes. Lipoic acid has a strong antioxidant capacity, and its anti-free radical ability is 400 times better than VC and VE. It can remove the active oxygen components that cause skin aging, and it is smaller than the molecule of VE, and it is also both water- soluble and fat-soluble, so it can be easily absorbed by the skin. Lipoic acid not only has a strong resistance to long-term oxidative damage, but also can effectively repair more serious cell oxidative damage that cannot be repaired by VC and VE.
2		1200-22-2	(R)-lipoic acid	(R)-lipoic acid is an antioxidant and an important cofactor for the mitochondrial enzyme complex. (R)-lipoic acid is more effective than racemic lipoic acid (mixed lipoic acid/α-lipoic acid/alpha lipoic acid).
3		176110-81-9	R(+)-Alpha Lipoic Acid Sodium	$R(+)$ -Alpha Lipoic Acid Sodium is a vitamin compound with better antioxidant effect than $\alpha$ -lipoic acid(1077-28-7).
4	APIs	303-98-0	Coenzyme Q10	Coenzyme Q10 can activate human cells and cell energy nutrition, thereby improving human immunity, anti-oxidation, delaying aging and enhancing human vitality. In addition, recent studies have shown that Coenzyme Q10 also has anti-tumor effects, and has a certain clinical effect on advanced metastatic cancer. It can prevent coronary heart disease, relieve periodontitis, treat duodenal ulcer and gastric ulcer, and enhance human immunity. It has a significant effect on function and relief of angina pectoris. Because Coenzyme Q10 has precise effects and no side effects, it is widely used in pharmaceuticals, cosmetics, food additives and other industries.
5	P	70-18-8	Glutathione - HOR	Reduced glutathione is a small molecule peptide, which is abundant in organisms, especially liver cells. It protects liver cell membranes, promotes liver enzyme activity, and combines with many toxic chemical substances to detoxify effect. Glutathione has a good effect on liver injury and cirrhosis caused by various reasons such as drug poisoning and alcoholism. Glutathione also has anti-oxidation, scavenging free radicals, detoxification, strengthening immunity, delaying aging, anti-cancer, anti-radiation damage and other functions.
6		5080-50-2	Acetyl-L-Carnitine Hydrochloride	Acetyl-L-Carnitine Hydrochloride is an ester of L-carnitine. It is a white powder, easily soluble in water but insoluble in acetone. Acetyl-L-Carnitine Hydrochloride is a natural substance present in the body, especially in muscle, brain and sperm. It participates in a series of important metabolic processes in the human body, taking away acetyl groups from cells and assisting in energy transfer. In addition to having functions similar to L-carnitine, Acetyl-L-Carnitine Hydrochloride is also optimized and has the following functions: neuroprotection and nerve promotion, enhancement of male reproductive function, and immune function.
6		1070-64-0/41443- 60-1	Ethyl 6,8- dichlorooctanoate	Ethyl 6,8-dichlorooctanoate is an important organic intermediate used in the synthesis of vitamin drugs lipoic acid and lipoamide, and lipoic acid is known as the "universal antioxidant" and is widely used in the treatment and prevention of heart disease and diabetes And many diseases such as Alzheimer's disease, the domestic and international market prospects are broad.
7	Food additives	541-15-1	L-carnitine	Carnitine is a kind of B vitamins, its structure is like amino acid, so some people classify it as amino acid. Its main function is to help transport long-chain fatty acids to provide energy. This prevents fat accumulation in the heart, liver and skeletal muscles. There are three forms of synthetic carnitine: L-carnitine, dextrorotatory and racemic. The effect of L-carnitine is better. L-carnitine has no toxic and side effects to the human body. Its main physiological function is to promote the conversion of fat into energy, which can reduce body fat and weight without reducing water and muscle. As a new type of nutritional fortifier, L-carnitine is especially used as an additive in infant formula, athlete's food, and weight-loss and fitness foods. Currently, it has been widely used in functional foods.
8		36687-82-8	L-Carnitine L-Tartrate	L-Carnitine L-Tartrate is considered to be the biologically active form of carnitine in the human body. It is stored in almost all parts of the human body, but mainly exists in muscle cells, including the cells of the heart. L-Carnitine L-Tartrate is a stable form of L-carnitine. The active ingredient is still L-carnitine, but the content is only 32%. The other 68% is tartaric acid. Its action and effect are exactly the same as L-carnitine. It is generally used in the production of capsules and tablet. The Chinese Food Additive Hygiene Standard GB2760-1996 stipulates that L-Carnitine L- Tartrate is a food nutrient fortifier, which can be used in chewable tablets, liquids, capsules, milk powder and milk beverages. L-carnitine tartrate is widely used in health care products, food and cosmetics industries.



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9		108-87-2	Methylcyclohexane	Methylcyclohexane is an important environmentally friendly organic solvent and extractant. It is widely used in ink, rubber, paint, grease and other industries. It is also used in organic synthesis. It can also be used as a standard for calibrating thermometers.
10		67-68-5	Dimethyl sulfoxide	Dimethyl sulfoxide is extremely versatile and can be used as an organic solvent, reaction medium and organic synthesis intermediate. In medicine, dimethyl sulfoxide has anti-inflammatory and analgesic effects, and has strong permeability to the skin. Therefore, it can dissolve certain drugs and make these drugs penetrate into the human body to achieve the purpose of treatment. Using this carrier characteristic of dimethyl sulfoxide, it can also be used as an additive for pesticides.
11		100-51-6	Benzyl alcohol	Benzyl alcohol has a wide range of uses. It can be used as solvents, fragrances, preservatives, raw materials, etc., for the production of adhesives, castings, cleaners, building materials, fillers, floor materials, hardeners, metal coatings, paints/varnishes, and photography Developers, printing inks, skin care products, injections and other products.
12	Organic Chemicals R	100-52-7	Benzaldehyde	Benzaldehyde is an important raw material for the pharmaceutical, dye, perfume and resin industries, and can also be used as a solvent, plasticizer, and low-temperature lubricant. In the flavor industry, it is mainly used to formulate food flavors, and a small amount is used in daily chemical flavors and tobacco flavors. Although it is widely used as a commercial food seasoning and industrial solvent, the main use of benzyl alcohol is to synthesize a variety of other compounds from pharmaceuticals to plastic additives. Benzyl alcohol is also an important intermediate in the production of perfumes, fragrances and the synthesis of certain aniline dyes, such as the production of herbicides Yeyanku, plant growth regulator trinexaine, production of moxybenzaldehyde, lauric acid, lauric aldehyde, product green, Benzyl benzoate, benzylidene aniline, benzylidene acetone, etc.
13		100-63-0	Phenylhydrazine	Phenylhydrazine is the first synthetic hydrazine derivative. It is often used as an intermediate for organic, dyes, medicines, and pesticides: organic intermediates for the preparation of pyrazolines, triazoles, indole, etc.; dye intermediates for the preparation of disazo Dve intermediates, such as 1-phenyl 3 methyl-5-pyrazolone, etc.; pharmaceutical intermediates, preparation of antipyretic, analgesic, and anti- inflammatory drugs, such as antipyrine and aminopyrine, etc.; pesticide intermediate Body, prepare insecticides to kill physhorus, triazophos, oxaconazole, fidaconazole and the like. Phenylhydrazine is also used in the production of developer. In addition, phenylhydrazine is also an important carbonyl identification reagent, used to identify aldehydes, ketones and sugars.
14		0000Ct	1, 1-dichloroethene	1,1-Dichloroethylene, also known as vinylidene chloride, is mainly used in the manufacture of synthetic fibers and various copolymers, as well as adhesives and organic synthesis materials. 1,1-Dichloroethylene is an intermediate for the preparation of methyl permethrinate. Using a copolymer based on 1,1-dichloroethylene (containing at least 80%), a flame-resistant vinylidene fiber can be prepared. 1,1-Dichloroethylene can not only polymerize by itself, but also can form copolymers with acrylonitrile, butadiene, acrylate, styrene, vinyl chloride, methacrylic acid, methyl methacrylate and other substances. Various synthetic resins are produced and used in the polymer industry and the motion picture film industry. 1,1-Dichloroethylene resin can be processed into fibers or films, and can be used for surface coating of paper or plastic films. Polyvinylidene chloride fiber can be used to produce fabrics, tents, insect nets, car seat cushions, etc. Polyvinylidene chloride film has lower air permeability and moisture permeability than other plastic films, and is suitable for food packaging.
15			121-44-8	Triethylamine



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16		67-63-0	Isopropanol	Isopropanol is the simplest secondary alcohol and one of the isomers of n-propanol. In 1920, the New Jersey Standard Oil Company produced synthetic isopropanol by using propylene in refinery gas. It was considered the budding of petrochemical industry, so it was regarded as the first chemical product made from petroleum raw materials in the history of petrochemical development Isopropanol has a wide range of uses as an organic raw material and solvent. As a chemical raw material, it can produce acetone, hydrogen peroxide, methyl isobutyl ketone, diisobutyl ketone, isopropylamine, isopropyl ether, isopropanol ether, isopropyl chloride, as well as fatty acid isopropyl ester and chlorine Substitute fatty acid isopropyl ester and so on. In fine chemicals, it can be used to produce isopropyl nitrate, isopropyl xanthate, triisopropyl phosphite, aluminum triisopropoxide, and medicines and pesticides. As a solvent, it can be used in the production of coatings, inks, extractants, aerosols, etc. It can also be used as antifreeze, detergent, additive for blending gasoline, dispersant for pigment production, fixative for printing and dyeing industry, glass and transparent plastics Anti-fogging agent, etc. Isopropanol is an important chemical product and raw material. It is mainly used as a dehydrating agent and cleaning agent in the pharmaceutical, cosmetic, plastic, perfume, coating and electronic industries. In the circuit board manufacturing industry, it is used as a cleaning agent and to make PCB holes conductive. In addition, it is also used in other electronic equipment, including cleaning CD cases, Isopropanol can also be used as a solvent for flexo, offset, gravure printing, and as an equipment cleaner. Isopropyl alcohol is also used in inks. In addition, isopropanol is also used as a gasoline additives, and pharmaceutical rednesses. It is also used in paints, thinners, coatings, cleaners and polishing, as well as surface disinfection, hospital disinfection, food processing plants, etc.
17	Organic Chemicals	75-05-8	Acetonitrile	Acetonitrile is the simplest organic nitrile. It has excellent solvent properties and is an important organic intermediate. The biggest use of acetonitrile is as a solvent, which can replace chlorinated solvents. It is often used as a solvent for the synthesis of vitamin A, vitamin Bl, amino acids, cortisone, carbon amine drugs and their intermediates. Acetonitrile is a raw material for the preparation of orthoacetate, an intermediate for the production of methyl permethrinate and Cyhalothrin, and a raw material for the production of pyrimidine derivatives used as herbicide intermediates. In addition, acetonitrile can also be used to synthesize ethylamine, acetic acid, etc., and also have many uses in fabric dyeing, lighting industry, perfume manufacturing and photosensitive material manufacturing.
19	P	98-88-4	Benzoyl chloride	Benzoyl chloride is used as a raw material for organic synthesis, dyes and pharmaceuticals, to produce initiator dibenzoyl peroxide, tert-butyl peroxybenzoate, pesticides and herbicides. Benzoyl chloride is an intermediate of the herbicide fenoxazone, as well as an intermediate of the insecticides Benzoximate, 1,2-dibenzoyl- 1-(t-butyl)hydrazine and isoxazophos. Benzoyl chloride is an important benzoylation and benzylation reagent. Most of the benzoyl chloride is used to produce benzoyl peroxide, followed by important chemical raw materials for the production of benzophenone, benzyl benzoate, benzyl cellulose and benzamide. Benzoyl peroxide is used as a polymerization initiator for plastic monomers, a catalyst for the production of polyester, epoxy, and acrylic resins, a self-setting agent for glass fiber materials, a crosslinking agent for silicone fluorine rubber, and for oil refining, Flour bleaching, fiber decolorization, etc. In addition, the reaction of benzoic acid and benzoyl chloride can also produce benzoic anhydride. The main purpose of benzoic anhydride is as an acylating agent, and it can also be used as a component of bleaching agent and flux, and it can also be used to prepare benzoyl peroxide.
20		59-88-1	Phenylhydrazine Hydrochloride	Phenylhydrazine hydrochloride is mainly used in the synthesis of pesticides, medicines, dyes and other organic substances.
21		872-36-6	1,3-Dioxol-2-one	Used as a lithium battery additive, a monomer of biodegradable materials, as well as an organic synthesis intermediate and lithium battery electrolyte additive.
22		3967-54-2	4-Chloro-1,3-dioxolan-2- one	4-Chloro-1,3-dioxolan-2-one is mainly used to prepare fluoroethylene carbonate and vinylene carbonate in lithium battery electrolyte. High-purity 4-Chloro-1,3-dioxolan- 2-one can also be directly used as a flame retardant additive for lithium battery electrolyte to improve the cycle performance of lithium battery electrolyte and increase service life.
23	New energy	171611-11-3	Lithium bis(fluorosulfonyl)azanide	Lithium bis(fluorosulfonyl)azanide has the characteristics of good electrochemical stability, good hydrolysis resistance and high conductivity. It can be widely used in electrolytes, especially in power batteries, which can improve the cycle performance and rate performance of power batteries.
24		96-49-1	Ethylene carbonate	Ethylene carbonate is mostly used in fertilizers, fibers, pharmaceuticals and organic synthesis. High-purity Ethylene carbonate can be used for rechargeable lithium-ion battery electrolyte.



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25		108-32-7	Propylene carbonate	Propylene carbonate is a polar solvent used as a plasticizer, spinning solvent, water- soluble dye and plastic dispersant. It can also be used as an oily solvent and an extractant for olefins and aromatics. Propylene carbonate used as the battery electrolyte can withstand harsher light, heat and chemical changes. Propylene carbonate also has certain uses in geological beneficiation and analytical chemistry. In addition, propylene carbonate can replace phenolic resin as wood adhesive, and it can also be used to synthesize dimethyl carbonate.
26		623-53-0	Ethyl-methylcarbonat	Ethyl-methylcarbonat is used as a solvent for lithium-ion battery electrolyte, as well as a solvent for special spices and intermediates.
27		105-58-8	Ethyl carbonate	Ethyl carbonate is used as a solvent and also used in organic synthesis. It is mainly used as a solvent for nitrocellulose, cellulose ethers, synthetic resins and natural resins, as well as intermediates for pesticides pyrethrins and pharmaceuticals phenobarbital. Ethyl carbonate is mainly used in the electrolyte of rechargeable lithium-ion batteries in the industry. In the instrument and meter industry, it is used to make fixing paint, which is used in the sealing and fixing of the cathode of the electron tube.
28		616-38-6	Dimethyl Carbonate	Dimethyl carbonate is an excellent low-toxic organic synthesis solvent, and also an important raw material for the production of medicines and pesticides. It can also be used as gasoline additives, lithium battery electrolyte, etc. Dimethyl carbonate can replace traditionally used toxic raw materials such as phosgene, dimethyl sulfate and methyl chloride, etc., and can be used for non-phosgene synthesis of polycarbonate, diphenyl carbonate, isocyanate and allyl diethylene glycol carbonic acid Esters; used to synthesize various carbamate pesticides, such as carbaryl, etc.; organic synthesis intermediates, such as anisole, xylylenediether, alkyl aromatic amine, symmetric diaminocarbazide, methyl carbazate, etc. ; In the pharmaceutical industry, it can be used to prepare amino oxazolidinone, ciprofloxacin, $\beta$ -ketocarboxylic acid ester pharmaceutical intermediates, etc. There are three main types of dimethyl carbonate: industrial grade, medical grade and battery grade. The industrial grade dimethyl carbonate produced occupies more than half of the market share. The dimethyl carbonate produced is mainly used for the production of polycarbonate and electrolyte solvents.
29	New energy	542-52-9	Dibutyl carbonate	Dibutyl carbonate(DBC) is a colorless liquid with large molecular weight, high flash point, and strong ox dation resistance. As a non-aqueous electrolyte, it can fully improve the electrochemical stability and safety of lithium batteries.
30		10497-05-9	Tris(Trimethylsilyl) Phosphate	Used as an organic synthesis intermediate and lithium battery electrolyte additive.
31	P	1072-53-3	1, 3, 2-Dioxathiolane 2, 2- dioxide	When 1, 3, 2-Dioxathiolane 2, 2-dioxide is used as an additive for lithium-ion battery electrolyte, its function is to suppress the decrease of the battery's initial capacity, increase the initial discharge capacity, reduce the swelling of the battery after being placed at high temperature, and improve the charge and discharge performance of the battery and the number of cycles.
32		99591-74-9	1, 5, 2, 4-Dioxadithiane 2, 2, 4, 4-tetraoxide	The battery added with 1,5,2,4-Dioxadithiane 2,2,4,4-tetraoxide has good high- temperature cycle performance and is suitable for power batteries, especially power batteries with lithium manganate as the cathode material. 1,5,2,4-Dioxadithiane 2,2,4,4-tetraoxide can prevent the manganese melted at high temperature from adsorbing on the surface of the negative electrode, inhibiting the increase in impedance, effectively improving the cycle characteristics, and greatly increasing the cycle life of the battery.
33		33027-66-6	1, 3, 5, 2, 4, 6 <sup>-</sup> triazatriphosphorine, 2 <sup>-</sup> ethoxy-2, 4, 4, 6, 6 <sup>-</sup> pentafluoro-2, 2, 4, 4, 6, 6 <sup>-</sup> hexahydro-	1,3,5,2,4,6-triazatriphosphorine, 2-ethoxy-2,4,4,6,6-pentafluoro-2,2,4,4,6,6- hexahydro- can be used as organic synthesis intermediates and pharmaceutical intermediates, and can also be used as a flame retardant for lithium ion batteries.
34		554-13-2	Lithium carbonate	Used in semiconductors, televisions, atomic energy, ceramics, medicine, catalysts and other sectors, also used in the preparation of lithium compounds, and used as drugs for the treatment of manic and depressive psychosis in medicine. Battery-grade lithium carbonate is mainly used to prepare lithium-ion battery cathode materials such as lithium cobaltate, lithium manganate, ternary materials and lithium iron phosphate.
35		15365-14-7	Lithium iron(II) phosphate	Lithium-ion battery cathode materials mainly include lithium cobalt oxide, lithium manganate, nickel manganese cobalt ternary materials and lithium iron phosphate. Lithium iron phosphate has high safety, stable cycle performance, low price, stable discharge platform, and are environmentally friendly. It is generally considered to be the most promising cathode material for lithium-ion batteries, especially for power lithium-ion batteries.



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36	New energy	1120-71-4	1,3-Propanesultone	1,3-Propane sultone is a new functional fine chemical material. It can react with many kinds of compounds under very mild conditions and accurately provide sulfonic acid groups, thereby giving these compounds new properties (such as hydrophilicity, antistatic properties, etc.). So it is considered to be an excellent general-purpose sulfonating agent. 1,3-Propane sultone is the key raw material for the synthesis of important electroplating additive intermediates such as PPS, UPS, DPS, MPS, ZPS, POPS, SP and other products. 1,3-Propane sultone is used as a surfactant, also used in the preparation of cosmetics and as a pharmaceutical intermediate in the pharmaceutical industry. It is also used as a synthetic sulfonating agent for leather, ink and sensitizing dyes. It is widely used in pharmaceutical and chemical industry, photosensitive materials, lithium batteries, biochemistry, textiles, lubrication, wastewater treatment, surface treatment and other industries. 1,3-Propane sultone is also an important raw material for the production of lithium batteries, which can be used in lithium secondary batteries to enhance battery cycle times and service life.
37		1310-65-2	Lithium hydroxide	Lithium hydroxide is one of the main raw materials for the production of high-grade lithium-based grease. Lithium hydroxide has a wide range of uses, mainly used in chemical raw materials, chemical reagents, battery industry, petroleum, metallurgy, glass, ceramics and other industries. It is also an important raw material for defense industry, atomic energy industry and aerospace industry. Lithium-based grease produced with lithium hydroxide has long service life, strong water resistance, good fire resistance, difficult to oxidize, and stable performance during multiple heating-cooling-heating cycles. The applicable temperature range can be from -50° C to +300° C. It is widely used in the lubrication of military equipment, airplanes, automobiles, rolling mills and various mechanical transmission parts. In the battery industry, lithium hydroxide is used as an additive for alkaline storage batteries and nickel-hydrogen batteries, which can extend battery life and increase storage capacity.
38		7664-39-3	Hydrofluoric acid	Hydrofluoric acid is the raw material for the production of refrigerant "Freon", fluorine-containing resin, organic fluoride and fluorine. In chemical production, it can be used as a catalyst for alkylation, polymerization, condensation, isomerization and other organic synthesis. It is also used for pickling of stainless steel and non- ferrous metals, glass instrument scales, glassware and mirror engraving, lettering, and glassware polishing, frosted bulb and general bulb treatment, metal graphite emulsion silicon removal purification, metal casting sand removal, graphite ash Removal, sem conductor (germanium, silicon) manufacturing. It is also used as a catalyst for dye synthesis and other organic synthesis. It is also used in electroplating, reagents, fermentation, ceramic processing, and the manufacture of fluorine-containing resins and flame retardants.
39		244761-29-3	Lithium bis (oxalate) borate	Lithium bis(oxalate)borate is a new and proprietary conductive salt for the use in high performance batteries like lithium batteries, lithium ion batteries and lithium polymer batteries.
40		409071-16-5	Lithium difluoro(oxalato)borate (1-)	Lithium difluoro(oxalato)borate(1-) can be used as a film-forming additive in the electrolyte of lithium batteries or as a conductive salt instead of lithium hexafluorophosphate.
41		14283-07-9	Lithium tetrafluoroborate	Lithium tetrafluoroborate can be used as a catalyst for organic synthesis and a component of lithium-ion battery electrolyte.
42		7789–24–4	Lithium fluoride	Lithium fluoride can be widely used as a co-solvent in glass lining, copper and aluminum welding processes and salt melting chemical processes. It is also recommended as a heat carrier for aerospace technology to store solar radiation heat. It can also be used in aluminum electrolysis and metallurgical industries middle. High-purity lithium fluoride is used to make fluoride glass, and it can also be used to make prisms for spectrometers and X-ray monochromators. Lithium fluoride is an important raw material for lithium-ion batteries.

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