

A close-up photograph of a person's hands pouring coolant from a white plastic jug into a car's engine. The person is wearing a black long-sleeved shirt and a black wristband. A black funnel is held in their left hand, and the white jug is tilted in their right hand, pouring a clear liquid into the funnel. The engine components are visible in the foreground, and the background is blurred.

Coolant: Product Offering 2026



ET2C International Inc.

SOURCING MADE SIMPLE

Five. Introduction for Different Models of Coolant

1. ET-1 Coolant

Composition and Properties:

ET-1 coolant consists of modified monohydric alcohol, the main additives include corrosion inhibitors, mold inhibitors, solubilizers, etc. It is a light-colored liquid. At 20°C, the density, viscosity, specific heat and thermal conductivity of the stock solution are 0.850~0.860 g/cm³, 1.25 mPa·s (cP), 0.603 cal/g·°C and 0.26 W/m·K, respectively. The boiling point of the stock solution is higher than 60°C, the freezing point is lower than -100°C, and the flash point is 16°C. Other relevant parameters are shown in Table 1.

Table 1 Physical parameters of different concentrations of ET-1 coolant

(reference values)

Parameters										
Freezing point °C	-25.5	-731.5	-38.5	-46.0	-53.0	-60.0	-66.5	-73.0	-80.0	
Boiling point °C	82	81	79	77	76	75	74	73	72	
Density g/cm ³ (20°C)	0.954	0.946	0.937	0.929	0.920	0.906	0.892	0.881	0.870	
Viscosity cP	7.19 (-15°C)	9.48 (-20°C)	15.38 (-30°C)	19.36 (-35°C)	23.43 (-40°C)	37.46 (-50°C)	39.72 (-55°C)	44.01 (-60°C)	65.99 (-70°C)	

Application Areas:

ET-1 coolant has the advantages of low operating temperature, low viscosity, large specific heat, high thermal conductivity, and strong cold-carrying capacity. It has excellent anti-corrosion performance on carbon steel, stainless steel, copper and other metals. Under different concentration conditions, it can be used as a secondary refrigerant in the temperature range of -100°C~normal temperature.

Use and Usage:

It should be diluted with water to the appropriate concentration for use according to the process temperature requirements. ET-1 series products can also be customized with different concentration standards for more stable and reliable performance. If mixed with other alcohol-based secondary refrigerants, an appropriate amount of ETZ Synergist should be added.

Packaging Specifications:

167 kg iron drums, more than 10 tons of bulk special tanker shipment.

Safety Tips:

This product is classified as a hazardous chemical, see the Material Safety Data Sheet for details.

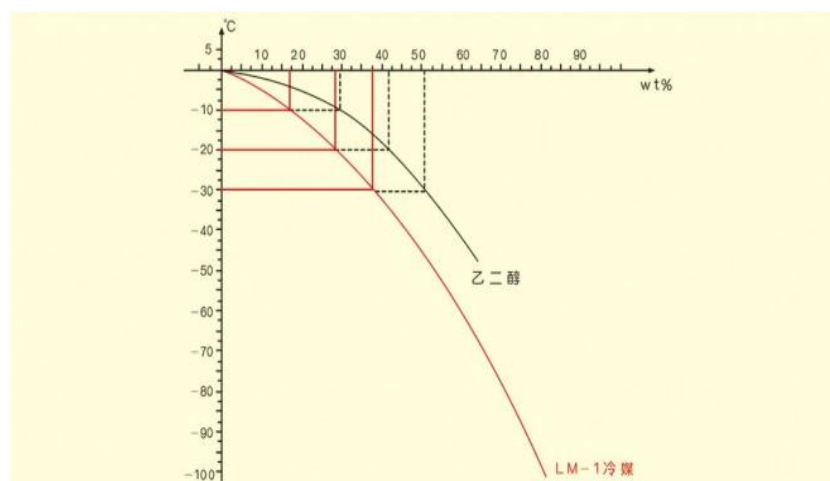


Figure 1 Concentration vs freezing point curves of ET-1 coolant and ethylene glycol

2. ET-1L Coolant

Composition and Properties:

The physical properties of ET-1 coolant are similar to those of ET-1, and the packaging specifications and safety precautions are the same as those of ET-1. It

has excellent anti-corrosion performance for aluminum and other metals, mainly used in refrigeration systems containing carbon steel, stainless steel, copper and aluminum.

3. ET-3 Series Coolants

Composition and Properties:

ET-3 series coolants consist of modified monohydric alcohol composition, the main additives include corrosion inhibitors, mold inhibitors, solubilizers, etc. They are light-colored liquids. At 20 °C , the density, viscosity, specific heat and thermal conductivity of the stock solution are 0.820~0.830 g/cm³, 1.68 mPa·s (cP), 0.612 cal/g·°C and 0.20 W/m·K, respectively. The boiling point of the stock solution is higher than 70 °C , the freezing point is lower than -100 °C , and the flash point is 17°C. Other relevant parameters are shown in Table 2.

Table 2 Physical parameters of different concentrations of ET-3 series coolants (reference values)

Parameters								
Freezing point °C	-4	-10	-18	-26	-34	-42	-55	
Boiling point °C	91.3	87.0	84.6	83.1	81.9	81.0	80.2	
Density g/cm ³ (20°C)	0.982	0.968	0.954	0.936	0.914	0.890	0.868	
Viscosity cP	2.38 (5°C)	5.34 (0°C)	11.82 (-10°C)	17.46 (-15°C)	18.57 (-20°C)	29.30 (-30°C)	37.04 (-40°C)	

Use and Usage:

This series of products have the advantages of low operating temperature, low

viscosity, large specific heat, high thermal conductivity, and strong cold-carrying capacity. They have excellent anti-corrosion performance on carbon steel, stainless steel, copper and other metals. Under different concentration conditions, they can be used as secondary refrigerants in the temperature range of -80°C~normal temperature. It should be diluted with water to the appropriate concentration for use according to the process temperature requirements. This series of products includes:

ET-3 glacial coolant is actually non-toxic, and is mainly used as a secondary refrigerant in the food industry.

ET-3A glacial coolant is mainly used as a general industrial secondary refrigerant.

ET-3AL glacial coolant is mainly used for refrigeration systems containing aluminum.

Packaging Specifications:

167 kg iron drums, more than 10 tons of bulk special tanker shipment.

Safety Tips:

This series of products are classified hazardous chemicals, see the Material Safety Data Sheets for details.

4. ET-4 Series Coolants

Composition and Properties:

ET-4 series coolants are composed of modified diols, the main additives include anti-corrosion agent, anti-mold agent, solubilizer, water stabilizer, etc. They are light-colored liquids. They are safe and low toxicity with no odor. They are non-flammable and not easily volatile. At 20°C, the density, viscosity, specific heat and thermal conductivity of the stock solution are 1.105~1.125 g/cm³, 13.92 mPa·s

(cP), 0.619 cal/g·°C and 0.26 W/m·K, respectively. The boiling point of the stock solution is higher than 140°C, the freezing point is lower than -50°C, and the flash point is higher than 120°C. Other relevant parameters are shown in Table 3.

Table 3 Physical parameters of different concentrations of ET-4 series coolants (reference values)

Parameters Concentration wt%	Density g/cm ³ (20°C)	Freezing point °C	Boiling point °C	Viscosity cP
20	1.024	-8.0	101	2.45(5°C)
25	1.032	-11.0	102	3.25 (0°C)
30	1.038	-15.0	103	5.49 (-5°C)
35	1.048	-19.0	104	7.93 (-10°C)
40	1.058	-23.0	106	12.37 (-15°C)
45	1.062	-29.0	107	18.94 (-20°C)
50	1.066	-35.0	107	32.90 (-25°C)
55	1.072	-42.0	108	53.57 (-30°C)
60	1.078	-49.0	109	63.63 (-30°C)
70	1.089	<-45.0	116	51.96 (-20°C)
80	1.101	<-45.0	123	70.20 (-20°C)
90	1.113	-19.0	140	65.03 (-10°C)

Use and Usage:

ET-4 series coolants have the advantages of low toxicity, non-flammable, large specific heat, safe and stable, strong cooling capacity. They have excellent anti-corrosion performance on carbon steel, stainless steel, copper and other metals. They can be used in a wide range of temperatures under different concentration conditions and are widely used in various refrigeration systems. It should be diluted with water to the appropriate concentration for use according to the process

temperature requirements. If mixed with other alcohol-based secondary refrigerants, an appropriate amount of ETZ synergist should be added. Other relevant parameters are shown in Table 4. This series of products includes:

ET-4-BP coolant adopts pure organic additives (without inorganic salt), which is more suitable for pharmaceutical industry. This product is environmental-friendly and can be used in the temperature range of $-35^{\circ}\text{C}\sim 130^{\circ}\text{C}$.

ET-4D-YE coolant adopts non-ionic additives to replace inorganic salt components in order to reduce the conductivity and enhance the resistance to electrochemical corrosion. This product is environmental-friendly, and has excellent anti-corrosion performance for aluminum, stainless steel, carbon steel and copper, etc. The using temperature range is $-35^{\circ}\text{C}\sim 130^{\circ}\text{C}$. Before using this product, it is recommended to clean the system before adding ET-4D-YE Coolant. It should be diluted with pure water to the appropriate concentration for use according to the process temperature requirements. It is strictly forbidden to mix with other secondary refrigerants. After normal use, test the pH value every 3 months. If the pH value is lower than the specified value, contact us for adjustment.

ET-4D coolant adopts multi-functional organic non-ionic additives, eliminating inorganic salts such as nitrogen, phosphorus and silicon to further improve electrochemical antioxidant capability, inhibit the trend of ionization of liquids, and achieve extremely low conductivity. The conductivity was less than $1\ \mu\text{S}/\text{cm}$ for the stock solution at 20°C and less than $5\ \mu\text{S}/\text{cm}$ for the 50% dilution. It is environmental-friendly and has excellent anti-corrosion properties for stainless steel, copper, brass, aluminum alloy and other metals. This product can be used as fuel cell coolant in the temperature range of $-35^{\circ}\text{C}\sim 100^{\circ}\text{C}$. The system should be cleaned

before use. It should be diluted with ultrapure water to the appropriate concentration for use according to the process temperature requirements. It is strictly forbidden to mix with other secondary refrigerants. After normal use, the conductivity value and pH value should be tested every 3 months. If the conductivity is higher than the specified value or the pH is lower than the specified value, you should contact us for adjustment.

Table 4 Comparison table of the models and properties of ET-4 series coolants

Product Model	Functional characteristics	Temperature range °C	Adaptive metals
ET-4	Commonly used type	-35-50	Stainless steel, carbon steel, copper
ET-4L	Anti-corrosion for aluminum	-35-50	Stainless steel, carbon steel, copper, aluminum
ET-4G	High temperature resistance	-35-150	Stainless steel, carbon steel, copper
ET-4GL	High temperature resistance, Anti-corrosion for aluminum	-35-150	Stainless steel, carbon steel, copper, aluminum
ET-4-BP	No inorganic salt, high temperature resistance	-35-130	Stainless steel, carbon steel, copper
ET-4D-YE	No inorganic salt, high temperature resistance, low conductivity	-35-130	Stainless steel, carbon steel, copper, aluminum
ET-4D	No inorganic salt, high temperature resistance, ultra-low conductivity	-35-100	Stainless steel, copper, 3 series aluminum, 6 series aluminum

Packing Specification:

25 kg plastic drum, 200 kg iron drum, 1100 kg ton drum, more than 10 tons of bulk cargo special tanker shipment.

5. ET-4A Series Coolants

Composition and Properties:

ET-4A series coolants consist of modified diols, and the main additives include anti-corrosion agent, anti-mold agent, solubilizer and water stabilizer. They are light-colored liquid with no odor. They are non-flammable and not easily volatile. At 20 °C , the density, viscosity, specific heat and thermal conductivity of the stock solution are 1.035~1.045 g/cm³, 27.00 mPa·s (cP), 0.644cal/g·°C and 0.21W/m·K, respectively. The boiling point of the stock solution is higher than 126°C, the freezing point is lower than -50°C, and the flash point is higher than 100°C. Other relevant parameters are shown in Table 5.

**Table 5 Physical parameters of different concentrations of
ET-4A series coolants (reference values)**

Concentration wt%	20	25	30	35	40	45	50	55
Parameters								
Density g/cm ³ (20°C)	1.016	1.019	1.022	1.026	1.029	1.032	1.035	1.036
Freezing point °C	-7	-10	-13	-16	-21	-26.5	-33	-41
Boiling point °C	101	101	102	103	104	105	106	106
Viscosity cP	3.26 (5 °C)	5.03 (0 °C)	9.04 (-5 °C)	17.10 (-10 °C)	28.60 (-15°C)	54.90 (-20 °C)	101.70 (-25 °C)	243.00 (-30 °C)

Use and Usage:

ET-4A series coolants have the advantages of environmental-friendly, high specific heat, and high cold-carrying capacity. They have excellent anticorrosion performance on carbon steel, stainless steel, copper and other metals. They can be used as secondary refrigerants in a wide range of temperatures under different concentration conditions. It should be diluted with pure water to the appropriate concentration for use according to the process temperature requirements. Other relevant parameters are shown in Table 6.

Table 6 Comparison table of the models and properties of ET-4A series

coolants

Model Functionality	ET-4A	ET-4AB	ET-4ABL	ET-4ABG	ET-4ABGL
Temperature range °C	-20~50	-20~50	-20~50	-20~100	-20~100
Toxicity	Actually non-toxic	-	Customizable	Customizable	Customizable
Whether hazardous material or not	No	No	No	No	No
Adaptive metals	Stainless steel, carbon steel	Stainless steel, carbon steel, copper	Stainless steel, carbon steel, copper, aluminum	Stainless steel carbon steel, copper	Stainless steel, carbon steel, copper, aluminum

Packing Specification:

25 kg plastic drum, 200 kg iron drum, 1100 kg ton drum, more than 10 tons of bulk cargo special tanker shipment.

6. ET-4B Coolant

Composition and Properties:

ET-4B Coolant is composed of modified ternary alcohols, and the main additives include anticorrosive agents, mold inhibitors, solubilizers, and water stabilizers. It is a light-colored or colorless liquid with no odor. It is non-flammable, not easily volatile and actually non-toxic. When prepared to appropriate concentrations, the boiling point is above 100 °C and the freezing point is below -25°C.

Use and Usage:

ET-4B Coolant has the advantages of large specific heat, actually non-toxic,

low low-temperature viscosity, wide temperature range, and strong cold-carrying capacity. It has excellent anticorrosion performance on carbon steel, stainless steel, copper and other metals. Under different concentration conditions, it can be used as a food secondary refrigerant in the temperature range of -20°C~95°C. It should be diluted with water to the appropriate concentration for use according to the process temperature requirements. Other relevant parameters are shown in Table 7.

Table 7 Physical parameters of different concentrations of ET-4B

Coolant (reference value)

Parameters Concentration wt%	Freezing point °C	Boiling point °C	Viscosity cP	Thermal conductivity W/m·K	Specific heat cal/g·°C	Density g/cm ³
40	-17.5	102	12.96 (-10°C)	0.424 (-10°C)	3.190 (-10°C)	1.110 (-10°C)
50	-25.0	106	45.39 (-20°C)	0.387 (-20°C)	2.611 (-20°C)	1.140 (-20°C)

7. ET-5 Coolant

Composition and Properties:

ET-5 coolant consists of modified mixed alcohols, and the main additives include corrosion inhibitors, mold inhibitors, solubilizers, and water stabilizers. It is a light-colored liquid. At 20°C, the density, viscosity, specific heat and thermal conductivity of the stock solution are 0.920~0.980 g/cm³, 1.71 mPa·s (cP), 0.670 cal/g·°C and 0.23W/m·K, respectively. The boiling point of the stock solution is higher than 60°C, the freezing point is lower than -60°C, and the flash point is 20°C.

Use and Usage:

ET-5 coolant has a high cooling capacity and moderate viscosity. It has excellent anticorrosion performance on carbon steel, stainless steel, copper and other metals. Under different concentration conditions, it can be used as an industrial secondary refrigerant in the temperature range of -50°C~normal temperature. This product can be used alone, can also be mixed with alcohols. When mixed use with other alcohols, an appropriate amount of ETZ synergist should be added.

Safety Tips:

This product is classified as a hazardous chemical, see the Material Safety Data Sheet for details.

8. ET-6 Series Coolants

Composition and Properties:

ET-6 series coolants consist of modified hydrocarbons. They are light-colored liquids. They are insoluble in water, chemically stable, low viscosity and combustible. Other relevant parameters are shown in Table 8.

Table 8 Physical parameters of ET-6 series coolants (reference values)

Parameters Model	Freezing point °C	Boiling point °C	Flash point °C	Viscosity cP (20°C)	Density g/cm ³ (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Temperature range °C
ET-6	-142	>70	-25	0.50	0.750	0.430	0.120	-130~30
ET-6A	-111	>120	16	0.80	0.771	0.431	0.118	-100~ room temperature
ET-6B	-153	>60	-32	0.29	0.642	0.532	0.111	-145~-100

Use and Usage:

ET-6 series coolants are ultra-low temperature secondary refrigerants, with the advantages of wide temperature range, low viscosity, stable chemical properties,

and strong cold-carrying capacity. They have excellent anticorrosion performance on carbon steel, stainless steel, copper and other metals. Select the appropriate model and use it as an industrial secondary refrigerant in the temperature range of $-140^{\circ}\text{C}\sim 30^{\circ}\text{C}$. Systems using this series of products should be closed with nitrogen to prevent moisture from entering. Before use, it is necessary to blow-dry the system with inert gas or dry hot air, and then inject the product directly. They are forbidden to be mixed with other secondary refrigerants.

Safety Tips:

This series of products are classified as hazardous chemicals, see the Material Safety Data Sheets for details.

9. ET-7 Coolant

Composition and Properties:

ET-7 coolant consists of modified alkanes. It is a light-colored liquid and insoluble in water. At 20°C , the density, viscosity, specific heat and thermal conductivity of it are $0.830\sim 0.870\text{ g/cm}^3$, $1.10\text{ mPa}\cdot\text{s}$ (cP), $0.407\text{ cal/g}\cdot^{\circ}\text{C}$ and $0.13\text{ W/m}\cdot\text{K}$, respectively. Its boiling point, freezing point and flash point are higher than 180°C , lower than -80°C , and higher than 57°C , respectively.

Use and Usage:

ET-7 coolant is a low-temperature secondary refrigerant with the advantages of wide operating temperature, low viscosity, stable chemical properties, and strong refrigerant-carrying capacity. It has excellent anticorrosion performance on carbon steel, stainless steel, copper and other metals. It can be used as an industrial secondary refrigerant in the temperature range of $-70^{\circ}\text{C}\sim 150^{\circ}\text{C}$. Systems using this product should be closed with nitrogen to prevent moisture from entering. Before use, it is

necessary to blow-dry the system with inert gas or dry hot air, and then inject the product directly. It is forbidden to be mixed with other secondary refrigerants.

Safety Tips:

This product is classified as a hazardous chemical, see the Material Safety Data Sheet for details.

10. ET-8 series Coolants

Composition and Properties:

ET-8 series coolants consist of modified organic acid salts, the main additives include corrosion inhibitors, mold inhibitors, solubilizers, stabilizers, etc. They are light-colored liquids with boiling points higher than 105°C. They are not easily volatile and not combustible with no flash point. They are also low toxic. Other relevant parameters are shown in Table 9.

Table 9 Physical parameters of ET-8 series coolants (reference values)

Parameters Model	Freezing point °C	Viscosity cP (20°C)	Density g/cm ³ (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Temperature range °C	Adaptive metals
ET-8	-60	3.78	1.360	0.585	0.464	-50~50	Stainless steel, carbon steel, copper
ET-8L	-60	3.78	1.360	0.585	0.464	-50~50	Stainless steel, carbon steel, copper, aluminum
ET-8G	-60	3.78	1.360	0.585	0.464	-50~100	Stainless steel, carbon steel, copper
ET-8GL	-60	3.78	1.360	0.585	0.464	-50~100	Stainless steel, carbon steel, copper, aluminum

ET-850	-50	3.46	1.337	0.585	0.477	-40~50	Stainless steel, carbon steel, copper
ET-850L	-50	3.46	1.337	0.585	0.477	-40~50	Stainless steel, carbon steel, copper, aluminum
ET-850G	-50	3.46	1.337	0.585	0.477	-40~100	Stainless steel, carbon steel, copper
ET-850GL	-50	3.46	1.337	0.585	0.477	-40~100	Stainless steel, carbon steel, copper, aluminum
ET-845	-45	3.31	1.318	0.634	0.482	-35~100	Stainless steel, carbon steel, copper
ET-840	-40	2.97	1.293	0.643	0.490	-30~50	Stainless steel, carbon steel, copper

Packing Specification:

30 kg plastic drum, 1400 kg ton drum, more than 10 tons of bulk cargo special tanker shipment.

11. ET-8A Coolant

Composition and Properties:

ET-8A coolant consists of a modified inorganic acid salt solution, the main additives include anti-corrosive agents, anti-mold agents, solubilizers and water stabilizers. It is a light-colored liquid. At 20°C, the density, viscosity, specific heat and thermal conductivity are 1.260~1.275 g/cm³, 3.60mPa·s (cP), 0.670 cal/g·°C and 0.48 W/m·K, respectively. Its boiling point and freezing point are 110°C and -50°C, respectively. It is not easily volatile and not combustible with no flash point. It is also low toxic.

Use and Usage:

ET-8A coolant has the advantages of safety and low toxic, non- combustible, large specific heat, high thermal conductivity, and strong cold-carrying capacity. It has anticorrosion properties on carbon steel, stainless steel, copper and other metals. It can be used as an industrial secondary refrigerant in the temperature range of -40°C ~normal temperature. Before use, it is necessary to clean the circulatory system, and then directly add the stock solution of ET-8A coolant. During use, it is necessary to regularly replenish the appropriate amount of ETH corrosion inhibitor of brine, and it is forbidden to mix it with other secondary refrigerants.

Packing Specification:

30 kg plastic drum, 250 kg iron drum, 1300 kg ton drum, more than 10 tons of bulk cargo special tanker shipment.

12. ET-9 series Coolants

Composition and Properties:

ET-9 series coolants consist of modified multifunctional organic compounds.

They are light-colored liquids which are insoluble in water and combustible. They have the advantages of low viscosity, low volatility, good anticorrosion property and stable chemical property. Other relevant parameters are shown in Table 10.

Table 10 Physical parameters of ET-9 series coolants (reference values)

Parameters Model	Freezing point $^{\circ}\text{C}$	Boiling point $^{\circ}\text{C}$	Flash point $^{\circ}\text{C}$	Viscosity cP (20°C)	Density g/cm^3 (20°C)	Specific heat $\text{cal}/\text{g}\cdot^{\circ}\text{C}$ (20°C)	Thermal conductivity $\text{W}/\text{m}\cdot\text{K}$ (20°C)	Adaptive metals	Temperature range $^{\circ}\text{C}$
ET-9B	-54	285	135	6.66	1.035	0.378	0.133	Stainless steels	-25~270

ET-9D	-90	175	62	1.18	0.901	0.448	0.135	Stainless steel, carbon steel, copper	-75~150
ET-9E	-55	253	114	2.35	0.881	0.488	0.142	Stainless steel, carbon steel, copper	-50~240

Use and Usage:

ET-9 series coolants are wide temperature range bi-directional secondary refrigerants. Select the appropriate model according to the process temperature range of the refrigeration system. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering. For operation at lower temperatures only, a nitrogen containment system is recommended.

13. ET-11 Series Coolants

Composition and Properties:

ET-11 series coolants consist of modified premium alkanes. They are colorless liquids which are insoluble in water. They have the advantages of low toxicity, low viscosity and chemically stable. They are also combustible. Other relevant parameters are shown in Table 11.

Table 11 Physical parameters of ET-11 series coolants (reference values)

Parameters Model	Freezing point °C	Boiling point °C	Flash point °C	Viscosity (20°C)	Density g/cm ³ (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Temperature range °C
ET-11	-85	192	60	1.66	0.761	0.496	0.117	-70~90

ET-11A	-50	225	94	3.79	0.780	0.487	0.106	-35~100
ET-11C	-70	243	105	2.65	0.770	0.533	0.130	-55~100
ET-11D	-85	218	83	1.96	0.751	0.518	0.125	-70~100
ET-11E	-95	189	62	1.38	0.740	0.485	0.120	-85~90
ET-11F	-110	162	41	1.04	0.731	0.455	0.118	-100~90

Use and Usage:

As bidirectional heat transfer medium, ET-11 series coolants have excellent anti-corrosion properties on carbon steel, stainless steel, copper and other metals. They are mainly used in the refrigeration systems for wide temperature ranges which water are strictly prohibited. Select the appropriate model according to the system process temperature range. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering. For operation at lower temperatures only, a nitrogen containment system is recommended.

Safety Tips:

ET-11, ET-11A, ET-11F coolant in this series of products are hazardous chemicals, see the Material Safety Data Sheets for details.

14. ET-14 Series Coolants

Composition and Properties:

ET-14 series products consist of modified perfluorinated compounds. They are non-flammable with no flash point. They are environmental-friendly with ozone depletion potential (ODP) of 0, and the global warming potential (GWP) very small. These products have excellent electrical insulation properties, ideal chemical inertness, excellent thermal conductivity and good fluidity. They have excellent anticorrosion

prevention for carbon steel, stainless steel, copper and other metals, and have wide applicability. Other relevant parameters are shown in Table 12.

Table 12 Physical parameters of ET-14 series coolants (reference values)

Model \ Parameters	Freezing point °C	Boiling point °C	Viscosity cP (20°C)	Density g/cm ³ (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Temperature range °C
ET-14A	<-120	50	1.03	1.611	0.267	0.060	-110~40
ET-14B	<-120	60	1.05	1.721	0.165	0.059	-110~65
ET-14C	<-120	75	2.53	1.735	0.223	0.060	-110~50
ET-14D	<-95	90	1.84	1.791	0.243	0.067	-80~80
ET-14E	<-95	109	4.01	1.830	0.241	0.060	-55~100
ET-14F	<-95	115	2.99	1.831	0.240	0.063	-50~105
ET-14G	<-80	150	6.32	1.814	0.235	0.065	-25~135

Application Areas:

They can be applied to a variety of temperature control cooling systems such as data centers, high-speed train power supply inverters, hydrogen energy batteries or lithium battery-powered vehicles, semiconductor manufacturing equipment cooling, electronic cleaning, antistatic agents, fire protection, fluorine material solvents, wind power generators, nuclear power, extra-high-voltage power grids, and military radar system.

Use and Usage:

Select the appropriate model according to the system process temperature range. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering. It is strictly prohibited to mix with other secondary refrigerants.

15. ET-15 Series Coolants

Composition and Properties:

ET-15 series coolants consist of modified polysiloxane. They are colorless or light-colored liquids and insoluble in water. They have the advantages of physiological inertia, good chemical stability, low freezing point, long service life, etc. They almost have no adverse effects on a large number of materials such as metals. They can be used in the indirect refrigeration systems such as pharmaceutical and chemical industries, new energy and other fields. Other relevant parameters are shown in Table 13.

Table 13 Physical parameters of ET-15 series coolants (reference values)

Parameters Model	Density g/cm ³ (20°C)	Viscosity cP (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Flash point °C	Temperature range °C
ET-15A	0.919	5.63	0.418	0.126	80	-70~180
ET-15B	0.942	10.40	0.407	0.136	148	-50~200
ET-15C	0.953	21.71	0.420	0.145	170	-30~200

Use and Usage:

ET-15 series coolants are wide temperature range bi-directional secondary refrigerants. They are suitable for various refrigeration heat transfer systems such as water-sensitive anhydrous systems. Select the appropriate model according to the system process temperature range. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering. It is strictly prohibited to mix with other secondary refrigerants.

16. ET-16 Series Coolant

Composition and Properties:

ET-16 series coolants consist of modified hydrocarbons. They are of colorless or light-colored liquids and insoluble in water. The flash points of them are higher than 120°C. They have good thermal stability, and are safe and reliable. They have the advantages of homogeneous heating, accurate temperature control, good heat transfer, easy transportation and operation. Other relevant parameters are shown in Table 14.

Table 14 Physical parameters of ET-16 series coolants (reference values)

Parameters Model	Density g/cm ³ (20°C)	Viscosity cP (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Temperature range °C
ET-16A	0.88~0.92	85.39	0.478	0.143	20~280
ET-16B	0.99~1.03	36.28	0.411	0.123	10~320
ET-16C	0.98~1.01	5.75	0.389	0.131	-30~340

Use and Usage:

ET-16 series products are mainly used as heat transfer medium in high-temperature environments, and are applied in the fields of pharmaceutical industry, chemical industry, new energy of light and heat, and oil and gas. Select the appropriate model according to the system process temperature range. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering.

17. ET-17 Series Coolants

Composition and Properties:

ET-17 series coolants consist of modified hydrocarbons. They are colorless or light-colored liquids and insoluble in water. They are all combustible with the flash

points higher than 100 °C. Other relevant parameters are shown in Table 15.

Table 15 Physical parameters of ET-17 series coolants (reference values)

Parameters Model	Pour point °C	Density g/cm ³ (20°C)	Viscosity cP (20°C)	Specific heat cal/g·°C (20°C)	Thermal conductivity W/m·K (20°C)	Flash point °C	Breakdown voltage kV
ET-17A	≤-50	0.889	21.13	0.429	0.112	136	65.6
ET-17B	≤-47	0.884	14.97	0.424	0.109	138.5	74.5
ET-17C	≤-40	0.848	3.42	0.427	0.112	107	84.3

This series products have high breakdown voltage, high DC resistivity, low gas production rate under low heat, which can provide good insulating properties. They also have excellent thermal and oxidative stability, which can prevent the formation of acid and sludge during use. They have good resistance to yellowing and do not contain corrosive sulfur, which will not corrode the electronic components or the cooling system. They have good stability and reliable performance as well.

Use and Usage:

ET-17 series products are suitable for data center server cooling system as immersion coolant. Select the appropriate model according to the system process temperature range. Before use, it is necessary to clean the system and blow-dry with dry air, then add the products directly. Keep the system closed during use to prevent moisture from entering.

18. ETH Corrosion Inhibitor of Brine

Composition and Properties:

ETH corrosion inhibitor of brine is mainly composed of film-forming agents, stabilizers, anti-oxidants, corrosion inhibitors and other components which does not

contain harmful substances such as chromium salts. It is a light-colored liquid which is non-flammable, non-volatile, non-corrosive and has no special odor. The pH value is 7-11 and the density is 1.020~1.080g/cm³. This product can form three layers of protective film on the metal surface which effectively slow down the pore corrosion damage of chlorine ions on metal equipment.

Application Areas:

ETH corrosion inhibitor of brine is specially used in indirect refrigeration systems where calcium chloride and sodium chloride solution are used as the secondary refrigerants, and it can also be used in other environments where brine is in contact with metal, such as brine drilling fluid. It can effectively resist the corrosion of brine on carbon steel, stainless steel, copper and other metals, prolonging the service life of the systems and reducing the losses caused by equipment corrosion, system leakage and downtime for maintenance.

Use and Usage:

The dosage is about 1% of the total amount of brine for the first time, weighed and added the product directly to the brine system, and keep the system in circulating working condition. The pH value and anticorrosion performance of the brine in the system should be tested every three months during use. The pH value will be adjusted and ETH is replenished appropriately according to the requirements of the technical standards (generally about 0.5%).

Packing and Storage:

25 kg plastic drum, train or car transportation, more than 10 tons of special tanker transportation.

Safety Tips:

This product is classified as a hazardous chemical, see the Material Safety Data Sheet

for details.

19. ETT Series Corrosion and Scale Inhibitors

ETT series corrosion and scale inhibitors are composed of rust inhibitor, corrosion inhibitor, scale inhibitor, bactericide and algacide. They are light yellow liquid and non-combustible. These products are widely used in the cycle-cooling water systems in chemical, pharmaceutical and other industries. They can effectively prevent metal corrosion and the formation of scale in the circulating water which ensure the safe and long-term operation of the cycle-cooling water systems. They can be directly added to the circulating water systems during use, with dosages of approximately 1% of the water capacities of the systems. Proportion replenishment should be done regularly according to the amount of water replenishment in later stage. Other relevant parameters are shown in Table 16.

Table 16 Index table of ETT series corrosion and scale inhibitors

Parameters Model	Appearance	Solubility	pH	Performance	Additive quantity	Packaging
ETT	Light-colored liquid	Non-stratified	>7.0	Good	1%	25、200 kg drum
ETT-1	Light-colored liquid	Non-stratified	>7.0	Excellent	0.5-1%	25、200 kg drum

Safety Tips:

The ETT corrosion and scale inhibitor is a hazardous chemical, see the Material Safety Data Sheet for details.

20. ETZ Series Secondary Refrigerant Synergists

Composition and Properties:

ETZ series secondary refrigerant synergists are supplementary substitutes for ET

series coolant products with the function of preventing the serious corrosion of metals of secondary refrigerant substitutes in the form of concentrated additives, and enhance the effectiveness of secondary refrigerant substitutes. For manufacturers who have already used a large number of alcohol-based secondary refrigerant substitutes, or who are inconvenient to add Coolant directly due to transportation constraints, they can choose these products which can be added directly to the alcohol-based aqueous cooling medium at a dosage of 0.5%~2%. Other relevant parameters are shown in Table 17.

Table 17 Index table of ETZ series secondary refrigerant synergists

Parameters Model	Appearance	Additive quantity	Packaging	Main ingredients
ETZ	Solid particles	0.5-1%	25 kg bag	Inorganic
ETZ-1	Light-colored liquid	1%-2%	25、200 kg drum	Inorganic
ETZ-2	Light-colored liquid	1%	25、200 kg drum	Inorganic, Organic
ETZ-4	Light-colored liquid	2%	25、200 kg drum	Organic

Comparative Tests for anti-corrosion performances:

1g of ETZ secondary refrigerant synergist was weighed and added into a 100mL conical flask with 25% ethylene glycol solution, then added one brightly polished carbon steel and one copper test piece. At the same time, get 100 mL of 25% ethylene glycol solution into another conical flask, and the same test pieces were added for comparative observation. The corrosion situation can be observed next day to determine the anti-corrosion performance of ETZ secondary refrigerant synergist. Keep these two conical flasks safe, the corrosion situation of the metal specimen can be observed for a long time.

Safety Tips:

ETZ, ETZ-1 and ETZ-2 secondary refrigerant synergists in this series of products

are hazardous chemicals, please refer to the Material Safety Data Sheet for details.

21. ET-XL Phase Change Materials for Cold Storage

Composition and Properties:

ET-XL series products are composed of main energy storage agents, phase change adjusting agents, anti-subcooling agents, anti-phase separation agents and inducing agents. These products realize the storage and release of cold energy through liquid-solid-liquid phase change, with high energy storage density and suitable specific heat and thermal conductivity. They are non-volatile, safe and reliable, and can be used repeatedly. Other relevant parameters are shown in Table 18.

Application Areas:

This series of products can control the phase change of multiple temperature nodes between $-24^{\circ}\text{C}\sim -2^{\circ}\text{C}$, so as to realize the storage of cold capacity in different low temperature conditions. The products have a wide range of application prospects in the field of cold storage, ice and snow sites, central air conditioning using low valley power peak cooling storage, as well as in the field of pharmaceuticals, food refrigerated transportation and other fields.

Table 18 Typical physical parameters of ET-XL series products (reference values)

Parameters Model	Phase transition temperature $^{\circ}\text{C}$		Latent heat	Density	Thermal conductivity	Specific heat
	Freezing	Melting	kJ/kg	g/cm^3 (20°C)	$\text{W/m}\cdot\text{K}$ (20°C)	$\text{cal/g}\cdot^{\circ}\text{C}$ (20°C)
ET-XL-2	-2	-2	317.4	1.06 ± 0.02	0.603	0.884
ET-XL-5	-3.5	-5.5	324.9	1.07 ± 0.02	0.585	0.837
ET-XL-10	-11	-10.5	310.7	1.11 ± 0.02	0.566	0.807
ET-XL-15	-16	-15.5	317.3	1.04 ± 0.02	0.567	0.870

ET-XL-18	-18	-18	307.1	1.07±0.02	0.559	0.844
ET-XL-21	-23	-21.5	322.7	1.13±0.02	0.584	0.890
ET-XL-24	-26	-24	298.1	1.17±0.02	0.560	0.781

22、 ET-XR Phase Change Materials for Heat Storage

Composition and Properties:

ET-XR series products are composed of main energy storage agents, phase change adjusting agents, anti-subcooling agents, anti-phase separation agents and inducing agents. These products realize the storage and release of heat energy through solid-liquid-solid phase change, with high energy storage density and suitable specific heat and thermal conductivity. They are non-volatile, safe and reliable, and can be used repeatedly. Other relevant parameters are shown in Table 19.

Application Areas:

This series of products can control the phase change of multiple temperature nodes between 7°C~55°C, so as to realize the storage of thermal energy in different low-temperature conditions. They have a wide range of applications in the fields of industrial waste heat recovery, solar energy storage, air-conditioning cooling system, phase change energy storage building, temperature control of electronic components, textile phase change microcapsules, and insulation of vegetable greenhouses.

Table 19 Typical physical parameters of ET-XR series products (reference values)

Model	Phase transition temperature °C		Latent heat kJ/kg	Density g/cm ³ (20°C)	Thermal conductivity W/m·K (25°C)	Specific heat cal/g·°C (25°C)
	Freezing	Melting				
ET-XR-7	7	7	154.0	1.40±0.10	0.609	0.802
ET-XR-36	36	36	294.1	0.75±0.05	0.913	0.504
ET-XR-53	53	52	268.9	0.80±0.05	0.474	0.400
ET-XR-55	55.5	55.5	206.4	0.80±0.05	0.401	0.496

Six. Qualitative Comparative Experiment of Anti-corrosion Performances of Different Secondary Refrigerants

Corrosion of carbon steel pieces by different secondary refrigerants in one day



Figure 1 Water
The water is turbid, and the carbon steel test piece is corroded



Figure 2 30% Brine
The solution is turbid, and the carbon steel test piece has turned to black gray



Figure 3 50% Ethylene glycol
The solution is become turbid, and 90% of the carbon steel test piece is corroded



Figure 4 30% ET-4 Coolant
The solution is colorless and transparent, and there is no obvious change on the surface of the carbon steel test piece

Corrosion of carbon steel pieces by different secondary refrigerants in a year



Figure 5 50% Ethylene glycol
The carbon steel test piece is severely corroded, and the rust accumulates and deposits on the bottom



Figure 6 30% ET-1 Coolant
There is no obvious change on the surface of the carbon steel test piece, and the solution is transparent

Seven. Quantitative Comparative Experiment of Anti-corrosion Performances of Different Secondary Refrigerants

1. Detection of the corrosion performances of A3 steel in different secondary refrigerants (Test by the Institute of Metals, Chinese Academy of Sciences)

The results of the corrosion properties of ethylene glycol, ET-1 and ET-4 coolants on A3 (Q235) steel are shown in Figure 1 and Table 20. The weight loss of A3 (Q235) steel in ethylene glycol solution increased linearly with the increase of immersion time, and the corrosion properties of A3 (Q235) steels in ET-1 and ET-4 coolants were slight. The macroscopic morphologies after corrosion for 168h are shown in Figure 2. A3 (Q235) steel corroded severely in the ethylene glycol solution and the surface has blackening, while in the ET-1 and ET-4 solutions remained bright.

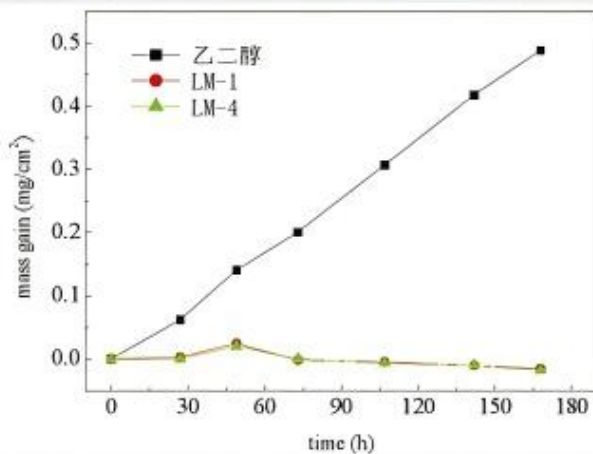


Figure 1. Weight losses of A3 (Q235) steels in different secondary refrigerants



Figure 2. The macroscopic morphologies of A3 (Q235) steels after immersion in ethylene glycol, ET-1 and ET-4 solutions for 168 hours is shown from top to bottom

Table 20 Weight losses of A3 steels in different secondary refrigerants (mg/cm²)

Samples Time (h)	Ethylene glycol	ET-1 Coolant	ET-4 Coolant
0	0	0	0
27	0.06222	0.00278	0.00017
49	0.14056	0.02444	0.02000
73	0.20056	-0.00167	0
107	0.30667	-0.00483	-0.00683
142	0.41778	-0.01017	-0.01037
168	0.48778	0.01556	0.01833

2. Comparison of corrosion results of metals in different secondary refrigerants over three years

Time	Test solution Test piece	25% ET-1 Coolant	25% Alcohol	Tap-water
0 Day	Initial weight of steel piece (g)	9.9512	9.9466	9.8545
	Initial weight of copper piece (g)	8.01356	8.2562	8.1342
	Initial weight of aluminum piece (g)	8.5142	8.1314	8.1251
1 Day	Weight loss of steel piece (g)	0	0.0024	0.0025
	Weight loss of copper piece (g)	0	0	0
	Weight loss of aluminum piece (g)	0	0	0
1 Month	Weight loss of steel piece (g)	0	0.0654	0.0701
	Weight loss of copper piece (g)	0	0.0315	0.0362
	Weight loss of aluminum piece (g)	0	0.0081	0.0103
1 Year	Weight loss of steel piece (g)	0	0.8012	0.8412
	Weight loss of copper piece (g)	0	0.3522	0.3924
	Weight loss of aluminum piece (g)	0	0.1021	0.1251

3 Years	Weight loss of steel piece (g)	0.0002	2.5004	2.5269
	Weight loss of copper piece (g)	0	1.1202	1.2018
	Weight loss of aluminum piece (g)	0	0.4561	0.5155
Corrosion rate of steel piece %		0.0007	8.38	8.55

The tests were conducted using 25% ET-1 coolant, 25% alcohol and tap-water in which A3 (Q235) carbon steel, copper and aluminum test pieces with the thickness of 4 mm were immersed. After 3 years of observation at room temperature (1997.2.20-2000.2.20), the weight loss of each piece was measured periodically to examine the corrosivity to metals of different solutions. The results are listed in the table above. By calculation, the corrosion rates of different solutions on various metals can be determined.

Equation for the corrosion rate:

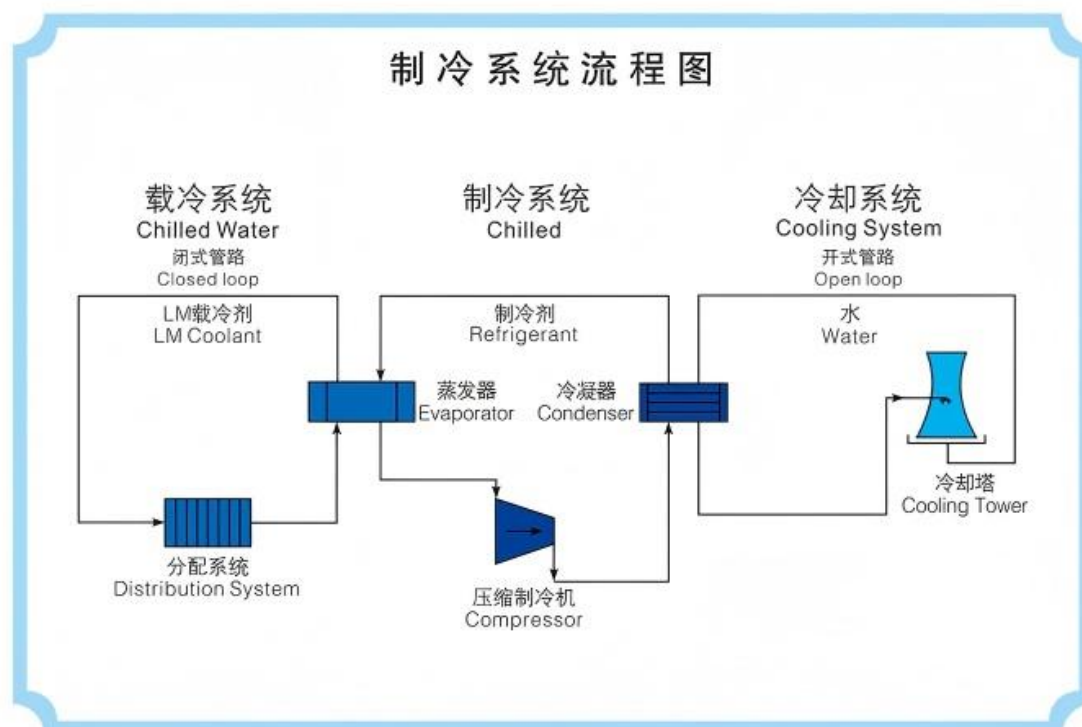
$$(\text{Metal weight loss}/\text{Initial weight}/\text{time}) \times 100\% = \text{Corrosion rate percentage}$$

For example, the corrosion rate of A3 (Q235) steel in 25% alcohol per year is as follows: $(2.5004/9.9466/3 \text{ years}) \times 100\% = 8.38\%$.

Eight. Comparison of physical properties of several kinds of secondary refrigerants at the same freezing point (using temperature -10°C)

Secondary refrigerant Parameters	Calcium chloride	Ethylene glycol	Alcohol	ET-1 Coolant	ET-4 Coolant
Concentration wt%	21	38	38	25	35
Freezing point °C	-20	-20	-20	-20	-20
Density g/cm ³ (20°C)	1.20	1.05	0.97	0.96	1.05
Specific heat cal/g·°C	0.721	0.825	0.90	0.950	0.837
Thermal conductivity W/m·K	0.527	0.391	0.36	0.435	0.429
Viscosity cP	5.07	7.63	12.82	5.54	6.73
Corrosivity	Severe corrosive	Corrosive	Severe Corrosive	Non-corrosive	Non-corrosive

Flowchart of Refrigeration System



Nine. Reasons for Selecting Coolant

1. High specific heat capacity: A high specific heat capacity provides greater cooling capacity, which reduces the required flow rate of the heat-transfer fluid, saves pump energy, and lowers consumption.
2. Low viscosity: Low viscosity facilitates pumping, thereby reducing energy consumption.
3. High thermal conductivity: High thermal conductivity decreases the heat-exchange surface area required.
4. Low corrosiveness: Minimizes corrosion of equipment, piping, and accessories, extends the service life and reduces maintenance costs. Corrosion can impair heat-exchange efficiency.
5. Excellent chemical stability: Allows long-term recycling, reduces the amount of make-up fluid.
6. After-sales service: After the delivery of Coolant, our company tracks product performance, provides regular service, and dispatches personnel for on-site visits and sampling. We test the fluid and promptly report results to customers. Regional offices ensure rapid on-site support if issues arise during use.
7. Strong R&D capabilities: We have a high-level professional team and our R&D center is a provincial-level engineering technology center. Provincial level liquid heat-transfer medium laboratory and testing center are established.
8. Transport assurance: We have a qualified professional transportation company to ensure dedicated vehicles for our products, prevent product contamination caused by mixed transportation, ensure product quality during transportation, and deliver goods safely and on time.

Ten. Safety Precautions

ET-1, ET-2, ET-3, ET-5, ET-6, ET-6A, ET-6B, ET-7, ET-11 and ET-11F

Coolants are all combustible and explosive hazardous materials. When storing and using them, keep away from sources of fire, prevent static electricity, prevent leakage, and maintain ventilation

If ET-1, ET-3, or ET-5 leaks, evacuate personnel immediately, open doors and windows, and dilute with water. In case of fire, extinguish with foam or other suitable agents. If ET-6, ET-6A, ET-6B, ET-9D, ET-9E, ET-7, ET-11, ET-11A, ET-11B, ET-11C, ET-11D, ET-15 series, ET-16 series, or ET-17 series leaks, promptly evacuate personnel, open doors and windows, and rinse with detergent-containing water. If these products catch fire, evacuate at once and extinguish with foam, dry chemical, carbon dioxide, or soil.

All ET series Coolants and their performance enhancers are harmful if ingested and must not be inhaled in large quantities. Storage and use areas must be well-ventilated, and the products must not be used for any purpose other than as heat-transfer fluids.

The data and performance figures in this product brochure are for reference only; the contract and related technical agreements shall prevail. Detailed requirements, safety precautions, and handling instructions during storage and use are provided in the product's enterprise standards, Material Safety Data Sheet, and safety labels.

Refrigerant professional secondary refrigerant VS Secondary refrigerant substitute Multiple performance comparisons								
Secondary refrigerant substitute	Category	Using temperature range ℃	Corrosiveness	Toxicity	Security level	Hazard level	Closed flash point ℃	Remarks
	Brine	-40~90	Strong corrosion	Low toxicity	Non-combustible	Dangerous goods	Nothing	
	Ethylene Glycol	-30~140	Strong corrosion	Low toxicity	Combustible	Dangerous goods	111	
	Alcohol	-80~40	Strong corrosion	Low toxicity	Inflammable	Dangerous goods	12	
Refrigerant Professional secondary refrigerant	Category	Using temperature range ℃	Corrosiveness	Toxicity	Security level	Hazard level	Closed flash point ℃	Remarks
	ET-1	-100~room temperature	Basically no corrosion	Toxic	Flammable	Dangerous goods	16	Modified monobasic alcohol
	ET-3	-80~room temperature	Basically no corrosion	Actually non-toxic	Flammable	Dangerous goods	17	Modified monobasic alcohol
	ET-4	-35~50	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Modified Diols
	ET-4A	-30~100	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>100	Modified diols
	ET-4AB	-20~50	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>100	Industrial-grade, modified diols
	ET-4ABL	-20~50	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>100	Industrial-grade, modified diols, suitable for aluminum and its alloy materials
	ET-4ABG	-20~100	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>100	Industrial-grade, modified diols, suitable for high-temperature working conditions
	ET-4ABGL	-20~100	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>100	Industrial-grade, modified diols, suitable for high-temperature working conditions, aluminum and its alloy materials
	ET-4B	-20~95	Basically no corrosion	Actually non-toxic	Stock solution is combustible	Non-hazardous materials	No flash point	Modified ternary alcohol
	ET-4-BP	-35~130	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Free of inorganic saltsmodified diols
	ET-4G	-35~150	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Suitable for high-temperature working conditions
	ET-4L	-35~50	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Suitable for aluminum and its alloy materials
	ET-4GL	-35~150	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Suitable for high-temperature working conditions,aluminum and its alloy materials
	ET-4D	-35~100	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Extremely low conductivity,At 20 ℃≤5μs/cm
	ET-4D-YE	-35~130	Basically no corrosion	Low toxicity	Stock solution is combustible	Non-hazardous materials	>120	Low conductivity, organic version, free of silicon, phosphorus, nitrite, etc
	ET-8	-50~100	Basically no corrosion	Low toxicity	Non-combustible	Non-hazardous materials	No flash point	Modified organic acid salt solution
	ET-8A	-40~100	Basically no corrosion	Low toxicity	Non-combustible	Non-hazardous materials	No flash point	Modified inorganic acid salt solution
	ET-8G	-50~100	Basically no corrosion	Low toxicity	Non-combustible	Non-hazardous materials	No flash point	Modified organic acid salt solution, suitable for high-temperature working conditions
	ET-8L	-50~50	Basically no corrosion	Low toxicity	Non-combustible	Non-hazardous materials	No flash point	Modified organic acid salt solution, suitable for aluminum and its alloy materials
	ET-8GL	-50~100	Basically no corrosion	Low toxicity	Non-combustible	Non-hazardous materials	No flash point	Modified organic acid salt solution, suitable for high-temperature working conditions and aluminum and its alloy materials
	ET-9B	-25~270	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	135	Modified multifunctional organic compounds
	ET-9D	-75~150	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	62	Modified multifunctional organic compounds
	ET-9E	-50~240	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	114	Modified multifunctional organic compounds
	ET-10A	-40~150	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	90	Modified hydrocarbons, suitable for water sensitive anhydrous systems
	ET-11	-70~90	Basically no corrosion	Low toxicity	Flammable	Dangerous goods	62	Modified advanced alkanes
	ET-11A	-35~100	Basically no corrosion	Low toxicity	Combustible	Dangerous goods	94	Modified advanced alkanes
	ET-11C	-55~100	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	105	Modified advanced alkanes
	ET-11D	-70~100	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	83	Modified advanced alkanes
	ET-11E	-85~90	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	62	Modified advanced alkanes
	ET-11F	-100~90	Basically no corrosion	Low toxicity	Combustible	Dangerous goods	41	Modified advanced alkanes
	ET-14A	-110~40	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14B	-110~50	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14C	-110~65	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14D	-80~80	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14E	-55~100	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14F	-50~105	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-14G	-25~135	Basically no corrosion	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Modified perfluorinated compounds
	ET-15A	-70~180	Basically no corrosion	Actually non-toxic	Combustible	Non-hazardous materials	80	Modified polysiloxane
	ET-15B	-50~200	Basically no corrosion	Actually non-toxic	Combustible	Non-hazardous materials	148	Modified polysiloxane
	ET-15C	-40~200	Basically no corrosion	Actually non-toxic	Combustible	Dangerous goods	170	Modified polysiloxane
	ET-16A	20~280	Basically no corrosion	Actually non-toxic	Combustible	Non-hazardous materials	200	Modified hydrocarbons
	ET-16B	10~320	Basically no corrosion	Actually non-toxic	Combustible	Non-hazardous materials	155	Modified hydrocarbons
	ET-16C	-30~340	Basically no corrosion	Low toxicity	Combustible	Non-hazardous materials	128	Modified hydrocarbons
	ET-16D	20~350	Basically no corrosion	Actually non-toxic	Combustible	Non-hazardous materials	190	Modified hydrocarbons
	ET-XL-0	0	No corrosion under specified use	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-2	-2		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-5	-5.5		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-10	-10.5		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-15	-15.5		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-18	-18		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-21	-21		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-24	-24		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XL-30	-30		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold thermal energy storage
	ET-XR-6	6		Actually non-toxic	Combustible	Hazardous materials	100℃	Phase change materials for cold and heat thermal energy storage
	ET-XR-7	7	No corrosion under specified use	Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold and heat thermal energy storage
	ET-XR-18	18		Actually non-toxic	Non-combustible	Non-hazardous materials	No flash point	Phase change materials for cold and heat thermal energy storage
	ET-XR-23	23		Actually non-toxic	Non-combustible	Non-hazardous materials	Solid products, not involving flash point indicators	Phase change materials for heat thermal energy storage
	ET-XR-28	28		Actually non-toxic	Non-combustible	Non-hazardous materials		Phase change materials for heat thermal energy storage
	ET-XR-36	36		Actually non-toxic	Non-combustible	Non-hazardous materials		Phase change materials for heat thermal energy storage
	ET-XR-53	53		Actually non-toxic	Non-combustible	Non-hazardous materials		Phase change materials for heat thermal energy storage
	ET-XR-55	55		Actually non-toxic	Non-combustible	Non-hazardous materials		Phase change materials for heat thermal energy storage
	ET-XR-114	114		Actually non-toxic	Non-combustible	Non-hazardous materials		Phase change materials for heat thermal energy storage



ET2C Offices



Sourcing from China,
India, Vietnam and Turkey



250 +

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