

# ENEOS IX Series

## Immersion Cooling Fluid

Due to the rapid development of digital technologies such as cloud computing, 5G, and generative AI, there is an increasing need to process vast amounts of data at high speeds. Consequently, while the performance and processing capabilities of network equipment have improved, the amount of heat generated has also increased, making server cooling an important consideration.

**ENEOS IX Series** is a cooling fluid designed for single-phase immersion cooling systems, which are known for their high cooling efficiency within server cooling systems. Thanks to additive formulation technology, it achieves a balance between superior oxidation stability and excellent electrical insulation properties to enable extended use.

### ● SPECIAL FEATURES

#### 1. Superior Oxidation Stability

As immersion cooling fluids are subjected to long-term thermal loads for cooling servers, oxidation stability of cooling fluid is very important. **ENEOS IX Series** exhibits enhanced durability and superior oxidation stability, thanks to the additive formulation based on our lubricant formulation technology.

#### 2. Compatible with Various Materials

A variety of metals and organic materials are used in immersion cooling systems. **ENEOS IX Series** has been evaluated for compatibility with various materials, allowing you to confirm compatibility with the materials used in your actual system in advance.

#### 3. Colorless, Transparent, and Virtually Odorless

In immersion cooling systems, it is necessary for the coolant to be colorless and transparent to allow for the inspection of electronic equipment submerged in it. Additionally, since single-phase immersion cooling systems are open to the atmosphere, it is desirable for the coolant to have a very low odor. We have carefully selected base materials so that **ENEOS IX Series** can become colorless, transparent and virtually odorless.

### ● Product Lineup

#### (1) Type J:

With a flash point of over 250°C, it is classified as a non-dangerous good under fire safety regulations in Japan. By achieving both low viscosity and a high flash point, it enhances cooling efficiency while easing restrictions related to the handling of hazardous materials.

#### (2) Type H:

This high cooling efficiency fluid pursues cooling through low viscosity, while also achieving an auto-ignition point of over 300°C as specified by the OCP (Open Compute Project) standards. These standards are widely used across industries dealing with data center hardware.

#### (3) Type B:

This coolant uses plant-derived raw materials to significantly reduce CO<sub>2</sub> emissions throughout the product lifecycle and contribute to carbon neutrality. In addition to energy savings through efficient immersion cooling, the coolant itself also contributes to reducing environmental impact.

### ● APPLICATIONS

General liquid cooling systems for IT equipment

### ● CONTAINERS

200-liter drum, 20-liter can

● **TYPICAL PROPERTIES OF ENEOS IX Series**

Type		Type J	Type H	Type B
Color (ASTM)		L0.5	L0.5	L0.5
Density (15°C)	g/cm <sup>3</sup>	0.837	0.809	0.819
Kinematic Viscosity (40°C)	mm <sup>2</sup> /s	34.8	9.19	19.7
Flash Point (COC)	°C	254	196	248
Auto-Ignition Point	°C	402	336	387
Acid Number	mgKOH/g	0.01	0.01	0.01
Volume Resistivity (25°C)	TΩ · m	>1	>1	>1

Note: The typical properties may be changed without notice. (March 2024)




**Handling  
Precautions**

▼ Follow these precautions when handling this product.

Type J

<b>Composition :</b>	Base Oil(s), Additives
<b>Hazard pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Not applicable
<b>Precautionary Statements:</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Prevention</b>	
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER/doctor.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>

Type H ,Type B

<b>Composition :</b>	Base Oil(s), Additives
<b>Hazard pictograms:</b>	
<b>Signal word:</b>	Danger
<b>Hazard Statement:</b>	May be fatal if swallowed and enters airways
<b>Precautionary Statements:</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER/doctor.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> <li>• Do NOT induce vomiting.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> <li>• Store locked up.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>