

# UNICUT JINEN Series

## Biodegradable Cutting Oils for Near-Dry Cutting

The **UNICUT JINEN Series** consists of environmentally friendly, biodegradable synthetic ester cutting oils specially developed for near-dry cutting.

### ● SPECIAL FEATURES

1. Outstanding cutting performance when used in minimal quantities in near-dry machining systems.
2. Excellent environmental friendliness, with biodegradability and safety comparable to that of vegetable oils.
3. Superior thermal and oxidation stabilities compared to vegetable oils due to formulation with synthetic esters. Additionally, it is less sticky in and around machinery.

### ● APPLICATIONS

All types of machining in near-dry cutting systems.

### ● CONTAINERS

UNICUT JINEN MQL	200-liter drum 20-liter pail can 4-liter can x 6
UNICUT JINEN MF24W	200-liter drum 20-liter pail can
UNICUT JINEN MFF	200-liter drum 20-liter pail can

### ● TYPICAL PROPERTIES OF UNICUT JINEN Series

Type			UNICUT JINEN MQL	UNICUT JINEN MF24W	UNICUT JINEN MFF
Color	(ASTM)		L0.5	≤ L1.5	≤ L1.5
Density	(15°C)	g/cm <sup>3</sup>	0.946	0.902	0.908
Flash point	(COC)	°C	260	280	290
Kinematic viscosity	(40°C)	mm <sup>2</sup> /s	19.6	24.1	31.3
Kinematic viscosity	(100°C)	mm <sup>2</sup> /s	4.39	5.88	7.08
Viscosity index		°C	137	205	199
Pour point		°C	≤ -50.0	-37.5	-37.5
Acid number		mgKOH/g	0.02	0.13	0.64
Copper strip corrosion	(100°C, 1h)		1	1	1
Biodegradability	OECD 301B	%	72	77	77
Applications			Formulated specifically for MQL machining. Ideal for steel processing	Suitable for MQL machining. Suitable for combined mist (oil film on water, etc.) Ideal for aluminum processing	Suitable for MQL machining. Multifunction oil (all-around oil for machine tools)

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

● **CUTTING PERFORMANCE**

The following shows a comparison of cutting performance based on the calculated tapping energy efficiency in a tapping test.

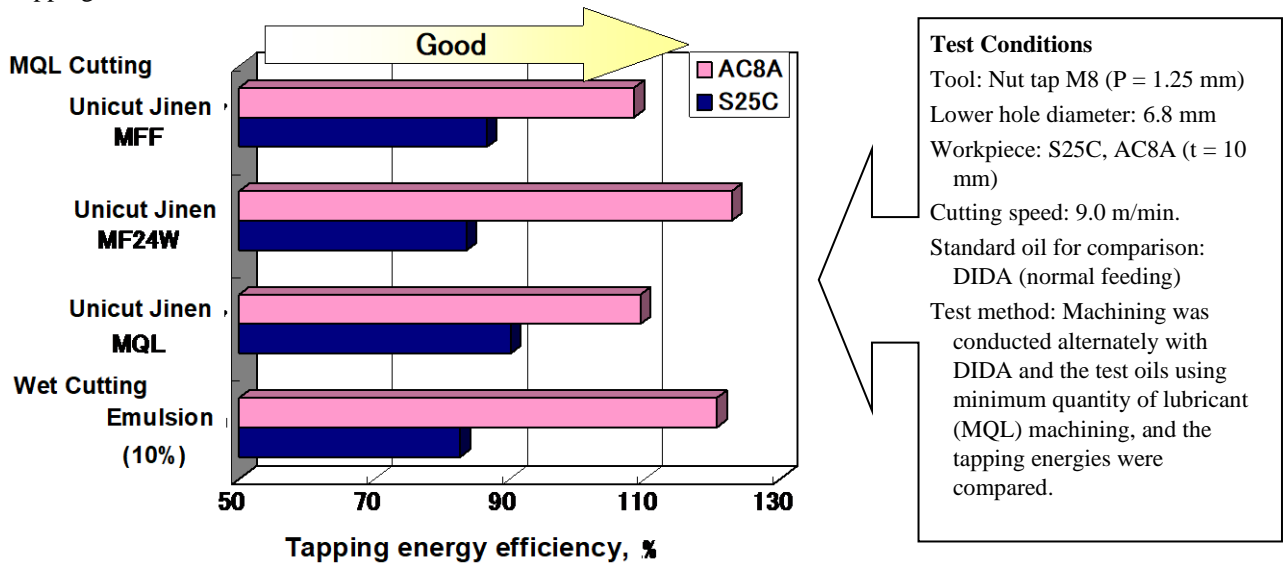


Fig. 1 Comparison of Cutting Performance

● **STICKINESS (Thin-Film Oxidative Stability)**

In minimum quantity lubrication (MQL) systems, cutting oil mist is likely to stick to the workpieces, inner walls of the metalworking machines, inside the mist collectors, etc. If the cutting oil has poor thin-film oxidative stability, the film may become sticky and worsen the work environment.

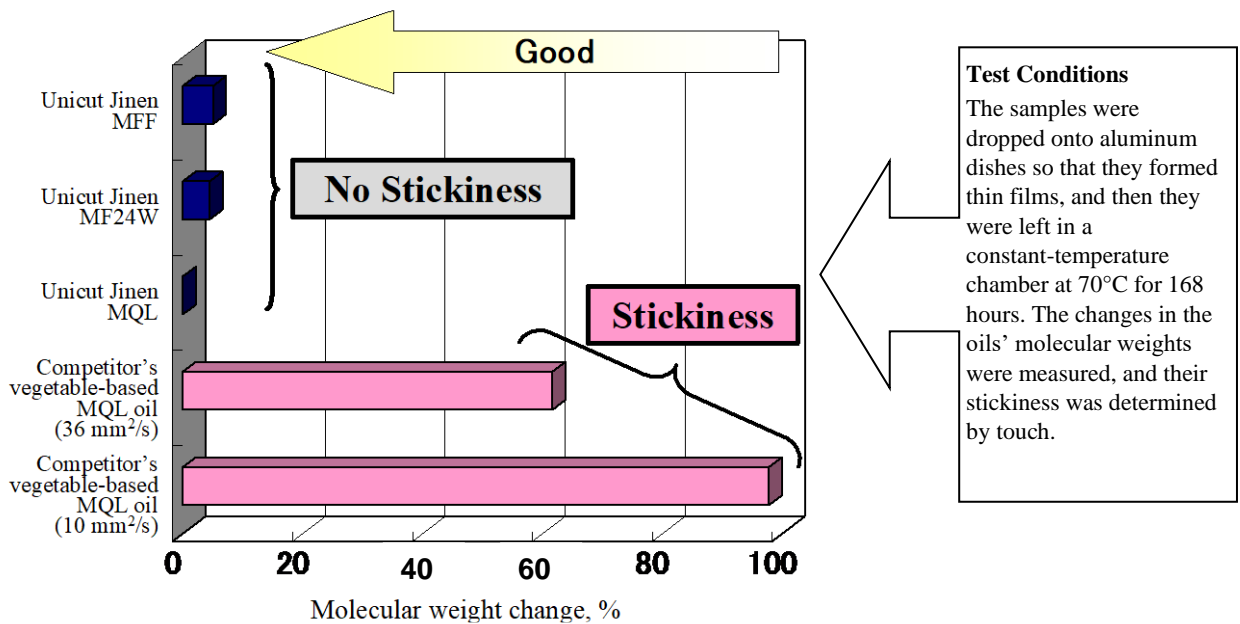


Fig. 2 Comparison of Stickiness



## Handling Precautions

▼ Follow these precautions when handling this product.


### UNICUT JINEN MQL

<b>Composition :</b>	Base Oil(s)
<b>Hazard category:</b>	Not applicable
<b>Precautionary Statements:</b> <b>Prevention</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></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>

### UNICUT JINEN MF24W

<b>Composition :</b>	Base Oil(s), Additives
<b>Hazard pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Harmful to aquatic life Harmful to aquatic life with long lasting effects
<b>Precautionary Statements:</b> <b>Prevention</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>• Avoid release to the environment.</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></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>

**UNICUT JINEN MFF**

<b>Composition :</b>	Base Oil(s), Additives
<b>Hazard pictograms:</b>	
<b>Signal word:</b>	Warning
<b>Hazard Statement:</b>	Harmful in contact with skin Harmful to aquatic life Harmful to aquatic life with long lasting effects
<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>• Avoid release to the environment.</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>• Take off contaminated clothing and wash it before reuse.</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>