

UNICUT JINEN SERIES

Cutting Fluids for Semi-Dry Machining

The Unicut Jinen Series consists of environmentally friendly biodegradable synthetic-ester cutting fluids specially developed for semi-dry machining.

● SPECIAL FEATURES

1. Outstanding cutting performance when used in minimum quantities in semi-dry machining systems.
2. Excellent environmental friendliness, with biodegradability and safety comparable to that of vegetable oils.
3. Made from synthetic ester oils for thermal and oxidative stability superior to that of vegetable oils and for less stickiness in and around machinery.

● APPLICATIONS

All types of machining in semi-dry systems.

● CONTAINERS

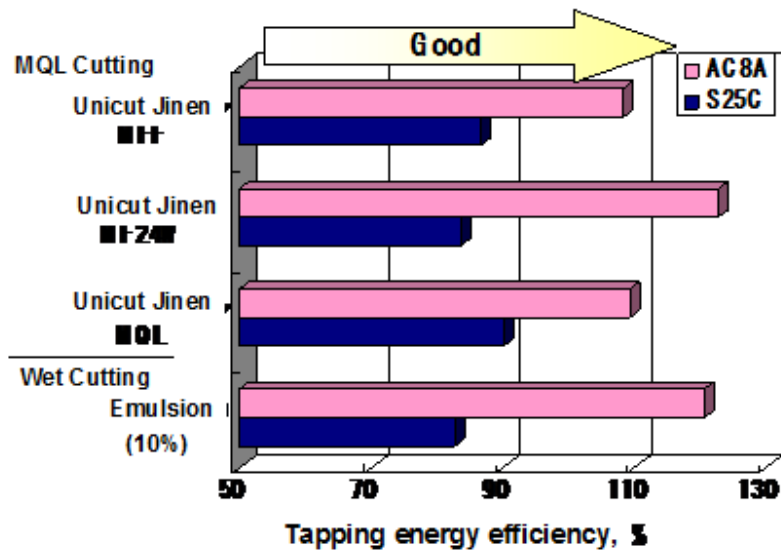
Unicut Jinen MQL	18 liters/NT can 4-liter cans x 6
Unicut Jinen MF24W	18 liters/NT can
Unicut Jinen MFF	200 liters/drum 18 liters/NT can

● TYPICAL PROPERTIES OF UNICUT JINEN SERIES

Type	Unicut Jinen MQL	Unicut Jinen MF24W	Unicut Jinen MFF
Density (15 °C) g/cm ³	0.95	0.91	0.92
Kinematic viscosity (40 °C) mm ² /s	19	24	32
Flash point (COC) °C	250 (Class 4 Petroleum)	260 (Flammable Liquid)	270 (Flammable Liquid)
Viscosity index	137	199	196
Pour point °C	≤ -45 °C	-25	-25
Acid number mgKOH/g	0.02	0.11	0.75
Biodegradability OECD 301B %	72	77	77
Applications	Formulated specifically for MQL machining.	Suitable for MQL machining. Suitable for combined mist (oil film-on-water, etc.)	Suitable for MQL machining. Multifunction oil (all-around oil for machine tools)

Note: The typical properties may be changed without notice. (Jun. 2008)

● CUTTING PERFORMANCE



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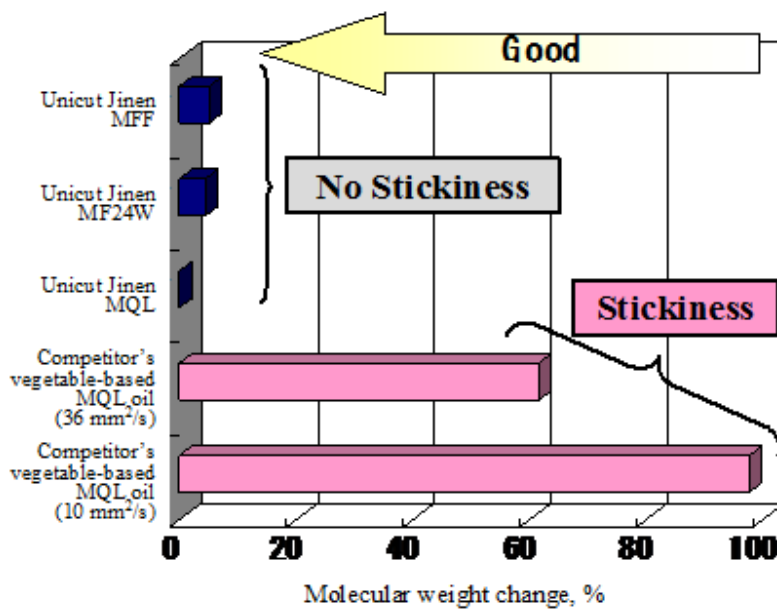
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Fig. 1 Comparison of Cutting Performance

● STICKINESS (Thin-Film Oxidative Stability)

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



Test Conditions
 The samples were dropped onto aluminum dishes so that they formed thin films, and then they were left in a constant-temperature chamber at 70°C for 168 hours. The changes in the oils' molecular weights were measured, and their stickiness was determined by touch.

Fig. 2 Comparison of Stickiness



Handling Precautions

▼ Follow these precautions when handling this product.

<p>! CAUTION</p> <p>Handling Precautions</p>	<ul style="list-style-type: none"> ● <u>Inflammation can occur if oil enters the eyes.</u> When handling this oil, wear <u>protective goggles</u> or take other measures to <u>prevent eye contact</u>. ● <u>Inflammation can occur if oil comes into contact with skin.</u> When handling this oil, wear <u>protective gloves</u> or take other measures to <u>prevent skin contact</u>. ● <u>The inhalation of mist may cause discomfort.</u> When handling this oil, wear a <u>respirator</u> or take other measures to <u>prevent mist inhalation</u>. ● Do not drink this oil. (Swallowing this oil can cause diarrhea and nausea.) ● <u>Keep out of reach of children.</u> ● Read the Material Safety Data Sheet (MSDS) for this product before using the product. Obtain the Material Safety Data Sheet from where you purchased the product.
<p>First Aid</p>	<ul style="list-style-type: none"> ● In case of eye contact, rinse eyes thoroughly with clean water and consult with a physician. ● In case of skin contact, wash skin thoroughly with soap and water. ● If mist is inhaled, move the person to a location with fresh air, wrap the person in a blanket, keep the person warm and quiet, and consult with a physician. ● If this oil is swallowed, do not induce vomiting. Consult with a physician immediately.
<p>Disposal of Used Oil and Containers</p>	<ul style="list-style-type: none"> ● Do not apply pressure to empty containers. The containers may burst if pressure is applied. ● Do not weld, heat, drill, or cut the containers. The remaining oil may ignite and the containers may explode. ● Follow all applicable laws and regulations when disposing of used oil or containers. If you are unsure of the proper disposal methods, consult first with the seller of the oil.
<p>Storage Method</p>	<p>Seal the container tightly after use in order to prevent dirt, moisture, etc., from entering the oil. Store in a dark location. Avoid direct sunlight.</p>