

UNIROLL CR 4

Cold Rolling Oil for Copper and Copper Alloys

UNIROLL CR 4 is a mineral oil-based rolling oil with a viscosity of 4 mm²/s (at 40°C), offering excellent rolling performance and surface finish quality. It maximizes its performance in high-speed rolling of thin sheets and foils of copper and copper alloys, for both finishing and intermediate processes.

● SPECIAL FEATURES

1. Excellent Rolling Performance

UNIROLL CR 4 maintains stable lubricity even under severe rolling conditions, such as high temperatures generated by high pressure, making rolling under high pressure possible.

2. Excellent Lubrication Performance

UNIROLL CR 4 exhibits excellent lubricity, providing the following benefits:

- (1) Reduction in rolling load
- (2) Reduction in power consumption
- (3) Reduction in the number of rolling passes
- (4) Improved heat scratch resistance
- (5) Reduction in coil temperature

3. Excellent Surface Gloss Retention

The finishing rolling speeds for thin sheets and foils on the latest machines reach over 600 m/min. Even under such high-speed rolling conditions, UNIROLL CR 4 maintains the surface gloss of the product in excellent condition.

4. Low Viscosity Rolling Oil with Superior Cooling Properties

By using carefully selected low viscosity base oil with a narrow boiling point range, the following characteristics are achieved:

- (1) Excellent cooling properties
- (2) Superior annealing and stain resistance
- (3) Reduced amount of rolling oil adhering to

the product

- (4) Lower mist generation and evaporation loss compared to oils of the same viscosity grade

5. Durable for Long-Term Use

Copper and copper alloys exhibit strong catalytic effects. UNIROLL CR 4 is equipped with catalytic inhibition and oxidation stability properties, making it well-suited for continuous long-term use.

● EFFECTS OF USE

- (1) Improved productivity and reduced power consumption due to the reduction in the number of rolling passes
- (2) Reduced consumption of rolling oil and cleaning solvents due to high-speed rolling
- (3) Prevention of heat scratches, improved cooling performance, and reduced rolling load
- (4) Improved annealing performance
- (5) Enhanced product surface gloss
- (6) Extended interval between roll grinding
- (7) Extended interval between rolling oil changes

● CONTAINERS

Tank truck and 200-liter drum

● TYPICAL PROPERTIES OF UNIROLL CR 4

Color	(ASTM)		L0.5
Density	(15°C)	g/cm ³	0.825
Kinematic viscosity	(40°C)	mm ² /s	4.08
Flash point	(COC)	°C	142
Pour point		°C	-10.0
Coefficient of friction	(Pendulum II Type)		0.13
Copper strip corrosion	(100°C, 1h)		1

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



Handling Precautions

▼ Follow these precautions when handling this product.

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