

# Mobilcut 102

## Product Description

Mobilcut is the trademark for Mobil Industrial Lubricant's line of high-performance soluble cutting fluids. Mobilcut 102 is conventional soluble cutting fluid which forms a milky emulsion when mixed with water.

Mobilcut 102 mixes readily into water to form a stable emulsion. It has excellent rust-preventive properties, is inhibited against foaming, and is versatile product suitable for a wide range of metal cutting and grinding operations. Mobilcut 102 effectively removes heat from the workpiece and can be applied as a stream or in mist form.

In many cases, the proper Mobilcut grade can replace straight mineral cutting oils, and a single grade may often serve all the machine tools in a plant.

## Features and Benefits

Mobilcut 102 offers the following features and advantages:

- Excellent emulsion stability
- Excellent rust protection
- Outstanding lubricating properties
- Dependable cooling of tool and work

## Applications

Mobilcut 102 is a water-mix cutting and grinding fluids are suitable for a wide range of ferrous and non-ferrous metalworking operations.

Mobilcut 102 is a premium quality soluble oil offering outstanding emulsion stability and rust inhibition. It emulsifies easily and resists oil-water separation in adverse operating conditions, such as hard water or contamination with dirt or tramp oil. Mobilcut 102 also contains a bactericide to help guard against the formation of objectionable odors. Diluted as a 95:5 water-oil mixture, it can also be used as a fire-resistant hydraulic oil. Additionally, manufactured parts can be cleaned and protected against rusting by immersing them in a Mobilcut 102 emulsion at 66-82 °C, then allowing the parts to dry.

**Preparation of Soluble Oils** Soluble oils are prepared for use by mixing them with relatively large portions of water. Note: To achieve a stable emulsion, always add oil to water - never add water to oil. For best emulsion stability and protection against rust and bacterial growth, use deionized or low hardness water (<100ppm). Begin by stirring one part oil into four parts water. Next, add water to this mixture to reach the desired dilution. The oil-water ratio may change during operation due to water evaporation and the filter's removal of oil attached to fine particles. Thus, it is important to regularly sample the oil concentration. This can be done by drawing off a representative sample in a graduated glass cylinder and breaking the emulsion with a saturated salt solution, such as Epsom salts. The oil concentration can easily be observed. Alternatively, the emulsion strength can be estimated by means of hand-held refractometers. Avoid storing soluble oils below freezing temperatures. If freezing should occur, re-warm the emulsion to room temperature and mix well before using.



## Typical Properties

Mobilcut	102
Color, ASTM	2.0
Density @ 15°C (kg/L)	0.89
Emulsion Stability	Excellent
Pour Point, °C	-6
Viscosity, cSt @ 40 °C	35

## Health and Safety

Care should be taken to prevent metalworking fluids from coming in contact with the skin or splashing into the eyes. Oils and greases in contact with skin can result in plugging of sweat glands and hair follicles. In the castoff soluble oil, some defatting of the skin may occur. These conditions may lead to skin irritation or dermatitis. Accordingly, good personal hygiene should always be practiced. Oils, greases, and other foreign materials should always be removed from the skin promptly. Where repeated skin contact occurs, protective skin creams, such as silicone-base creams, applied to clean hands prior to contact may be beneficial. MOBILCUT 102 are readily removed from the skin by waterless hand cleaners followed by washing with soap, water, and a soft skin brush.

Soiled clothing should not remain in contact with the skin. MOBILCUT 102 can be removed from clothing by dry-cleaning or by washing with laundry detergents. Neat (unemulsified) metalworking oils, especially those containing high concentrations of emulsifiers or rust inhibitors, present a potential hazard to the eyes if allowed to enter and remain in contact with the eyes. When diluted to water-oil ratios of 20:1 or greater, however, the effects are slight and transient. As a precaution when handling MOBILCUT 102, safety glasses, a face shield, or similar protection should be worn and normal safety practices followed. If the fluid is splashed into the eyes, immediately flush the eyes for 15 minutes with water. The eyes should be protected in any case during machining operations, because the fluid in use is normally contaminated with fine metal chips or abrasive particles.

MOBILCUT 102 does not contain nitrosamines, phenols or nitrites.

**WARNING:** "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition; they may explode and cause injury or death. Do not attempt to clean since residue is difficult to remove, and even a trace of remaining material constitutes an explosive hazard. "Empty" drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Additional important health and safety information on this product can be found in the Material Safety Data Sheet which is available online at [www.exxon.com](http://www.exxon.com) or by contacting Exxon Branded Lubricants, ExxonMobil Lubricants and Petroleum Specialties Company, North America Technical Services - MSDS, 3225 Gallows Road, Fairfax, VA 22037.

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