

SEMICUT[®]

Semi-Synthetic General Purpose Cutting and Grinding Fluid

PRODUCT DESCRIPTION:

SemiCut is a multi-duty, multi-metal universal semi-synthetic with the cleanliness, cooling and clarifying of a synthetic and the high lubricity of extreme pressure soluble oil. A combination of the best properties of synthetic and soluble oils, SemiCut provides the cleanliness and water-clear clarity of a synthetic fluid even in hard water. It has the same lubricity, tool life and excellent surface finish you would expect from an extreme pressure soluble oil coolant. SemiCut is a clear light golden brown liquid.

EXTENDS TOOL LIFE AND PROVIDES SUPERIOR SURFACE FINISH:

The unique blend of raw materials formulated in SemiCut are packed synergistically to provide superior surface finish and tool life due to the high lubricity on even the hard-to-machine space age alloys such as Inconel, Hastelloy, titanium stainless steels and high silica contact aluminums. This product is excellent for normal metals such as steel, cast iron, soft brass, copper and the softer aluminums.

RANCIDITY RESISTANCE:

The odor counteractants formulated into SemiCut, along with the tight micro-emulsion characteristics result in odor-free operation. No “Monday morning stink” or bacterial slime build-up on the machines or parts.

MULTI-METAL PROTECTION:

SemiCut’s state-of-the-art stain and corrosion inhibitors prevent rust, stain and corrosion on all metals. SemiCut is safe to machine and/or grind steel, cast iron, aluminum, brass, copper, galvanite, carbide, stainless steel and the modern alloys in the nuclear and aeronautical fields. SemiCut leaves a thin rust preventative film on the machine and parts to inhibit rust and corrosion of parts stored indoors.

FREE-FLOWING RESIDUE:

SemiCut leaves a non-sticky, water resolvable/emulsifiable residue on machine and parts. There is no sticky, tacky build-up or concrete-type residue to tie up machines, transfer lines or aid in bacterial growth. The free-flowing residue is completely water resolvable and can be removed with a light water rinse.

TRAMP OIL RESISTANCE:

SemiCut is designed to reject all water resistant tramp oils and grease quickly for ease of removal by skimming, centrifugation or other appropriate means. The rejection of tramp oil is very important to keep the system clean, odor-free and smoke-free.

CLEAR IN HARD WATER:

The tight micro-emulsion of SemiCut provides a water-clear solution in distilled through 30 grain hardness water. This provides a smoke-free, non-sticky operation and guarantees excellent tool life even in hard water. Many coolants, particularly soluble oils, will separate in hard water causing rust, residue and poor tool life. The micro-structure of SemiCut resists the bad effects of hard water and provides a clear, trouble-free coolant operation.

SAFE:

SemiCut is free of chlorine and sulfur. This makes it a perfect coolant for the nuclear and aeronautical industries. Chlorine and sulfur-free coolants greatly reduce the potential for stress cracks on the surface of the metals, while providing outstanding tool life and surface finish. SemiCut has synthesized lubricants which act synergistically to provide outstanding lubricity for tool life and surface finish even on hard-to-machine alloys.

OPERATION FRIENDLY AND ENVIRONMENTALLY SOUND:

Each raw material used in SemiCut was chosen for its safety to operate and the environment. It contains no toxic or highly hazardous materials to cause fumes, operator skin irritation, rashes or sensitization. SemiCut does not contain sulfur, boron, PCBs, MEA, DEA, phenols, nitrates, nitrites, creosols, harsh alkalies or heavy metals.

MINIMAL TRADE WASTE:

In using modern trade waste technology, SemiCut is easily cracked to reduce the volume of trade waste. This allows safe disposal and discharge through conventional treatment processes. SemiCut can be cracked with the use of calcium chloride and the oil phase hauled away and disposed of in most sanitary sewer systems. If the customer is interested in this, please contact Spartan laboratories for the procedure.

DIRECTIONS FOR USE:

A concentrate designed to be added to water, SemiCut forms a very stable emulsion/solution in water with a wide range of hardness.

1. **Always add SemiCut to water** at the appropriate concentrations with as much agitation as possible. Room temperature water forms the best emulsion/solution. (Refer to Recommended Starting Concentration Chart.)
2. Add the mixed coolant to the cleaned sump.
3. **Makeup:** When adding makeup to the machine, add SemiCut at 1/2 to 2/3 the concentration desired in the machine. For example, startup of 10:1 requires 20:1 makeup. Always add diluted solution as makeup; never plain water.

**RECOMMENDED STARTING CONCENTRATION
(parts water to parts SynSpar GP)**

	DUCTILE IRON	BRASS ALLOYS	MILD STEEL	STAINLESS STEEL	HARD STEEL ALLOYS	ALUMINUM ALLOYS	COPPER ALLOYS
GENERAL TURNING	20-1	20-1	20-1	15 to 20-1	15 to 20-1	20-1	20-1
BORING	15-1	15-1	15-1	10 to 15-1	10 to 5-1	15-1	15-1
PLANING SPOT FACING	20-1	20-1	20-1	15 to 20-1	15 to 20-1	20-1	20-1
GENERAL MILLING	20-1	20 to 25-1	20-1	15 to 20-1	15 to 20-1	20-1	20-1
GENERAL DRILLING	10-1	10-1	10 to 15-1	10-1	10-1	10-1	10-1
TAPPING/REAMING	10-1	10-1	10-1	5 to 10-1	5 to 10-1	10-1	10-1
GEAR CUTTING HOBBING	10-1	10-1	10-1	5 to 10-1	5 to 10-1	10-1	10-1
SCREW MACHINES	10-1	10-1	10-1	5 to 10-1	5 to 10-1	10-1	10-1
THREADING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
SAWING	10 to 15-1	10 to 15-1	15-1	10-1	10-1	10-1	10 to 15-1
BROACHING	5 to 10-1	10-1	5 to 10-1	5 to 10-1	5 to 10-1	10-1	10-1
SURFACE GRINDING	25-1	25-1	20-1	20-1	20-1	25-1	25-1
OD & FINISH GRINDING	20-1	20-1	20-1	20-1	20-1	20 to 25-1	20 to 25-1
ID & CYLINDRICAL GRINDING	20-1	20 to 25-1	20 to 25-1	20-1	20-1	20 to 25-1	20 to 25-1

**MONITORING COOLANT CONCENTRATION WITH THE AO
MODEL 10440 REFRACTOMETER**

SemiCut Concentration	Refractometer Reading
4:1 dil. 20%	8.0
9:1 dil 10%	4.0
14:1 dil 6.7%	2.7
19:1 dil. 5.0%	2.0
24:1 dil 4.0%	1.6

TECHNICAL DATA:

Viscosity – 30cps @ 24°C/75°F

Specific Gravity - 1.01 @ 24°C/75°F

pH (10% solution) - 8.9 to 9.1

Density @ 24°C/75°F - 8.4 lbs./gal.

Flash Point (Cleveland Open Cup) – greater than 212°

Solubility - Complete

Storage Stability -

- a. Shelf @ 24°C/75°F - one year minimum
- b. Accelerated @ 49°C/120°F - 60 days minimum
- c. Freeze/Thaw - 3 cycles minimum

Formula for determining Total Volume by Gallons

$$\frac{\text{Width x Length x Height (in inches)}}{231} = \text{Total Sump Capacity in Gallons}$$

PACKAGING:

SemiCut is available in tank wagons; 330-gallon reusable totes; 275-gallon disposable totes; recyclable HDPE (High Density Polyethylene) 55-gallon drums and 5-gallon pails. Label copy is available in both English and Spanish. Secondary labels are also available.

Be sure to read all Directions, Precautionary and First Aid Statements on product labels before use of this or any IPG/Spartan product. Material Safety Data Sheets for all IPG/Spartan products are available from your authorized IPG/Spartan distributor.

GUARANTEE:

Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit within one year of the date of manufacture. Use product as directed and read all precautionary statements.