

Missile Lube® 1, 1XL, 1XXL, 1XXXL *Straight Cutting Oil*

FEATURES

- Chlorine-Free
- Non-Staining
- Can be used on all materials
- Original Synthetic and Vegetable EP Technology
- Easy to Recycle and Waste Treat
- Low Misting

Missile Lube 1 XL is approved by Lockheed Martin

GENERAL DESCRIPTION

Hangsterfer's Missile Lube 1 series includes high quality, high performance, chlorine and sulfur free oils. The combination of synthetic and vegetable based Extreme Pressure additives increase tool life and improve surface finishes for a variety of metalworking operations. Composed of highly refined raw materials, the Missile Lube 1 series helps keep the machine clean and minimizes operator exposure to mist and smoke. Offering superior lubrication for the machine tool as well as the tool-work piece interface, the Missile Lube 1 series provides benefits in productivity and equipment life. The non-toxic and non-corrosive blend is designed for easy waste disposal and operator safety.

APPLICATION

Primary		Secondary	
CNC Milling	Forming	Broaching	Gear Hobbing and Shaving
CNC Swiss-style Turning	Grinding, Honing	Blanking	Tapping
CNC Turning	Stamping	Fine Blanking	Threading

MATERIAL

Primary			Secondary
Aluminum	Carbon Steel All	Stainless Steel	Copper and Brass
Carbide	Nickel Alloys	Titanium	Glass

INSTRUCTIONS

Missile Lubes can be applied by flood, drip or spray/mist units. They are suitable for stamping and forming of very thin stock of all types of materials, including stainless steel and nickel alloys. The low viscosity helps prevent part hang-up in high-speed presses and also minimizes residue on parts and scrap, thus reducing consumption.

Missile Lube 1 – *The highest viscosity of the Missile Lube range is suitable for a broad range of applications. Due to its viscosity it provides the maximum lubricity of the tool workpiece interface especially on demanding metal cutting and metal forming applications.*

Missile Lube 1 XL – *The combination of low viscosity mineral oils and EP additives make it ideal for grinding carbide and high-speed steel. The wheels stay clean and last longer, while surface finishes improve. It is excellent for high speed machining of aerospace aluminums and other exotic materials.*

Missile Lube 1 XXL - *With 100% more synthetic EP additives than the 1 XL, the 1 XXL has a much lower viscosity. It can be used for the same applications as 1 XL, but is more suitable for very small work, as 1 XXL is easier to deliver to the tool-workpiece interface.*

Missile Lube 1 XXL and 1 XXXL are well suited for honing of ferrous and non-ferrous materials where chlorine additives are restricted. They are non-staining and leave little residue while providing rust protection. The extreme pressure additives in Missile Lube provide flushing and pickup protection for the abrasive while allowing free cutting for superior finishes. Honing is a cutting operation with very small chips.

Missile Lube 1 XXL and 1 XXXL are suited for use with solid and expanding hones in all type honing machines. Suitable for use on hone materials but not limited to; diamond, supper abrasives, ceramic and silicone carbide.

MAINTENANCE

Maintenance: While straight cutting oils are not susceptible to the broad range of problems encountered with a water-based fluid, regular maintenance does improve their performance and extend their life. The Missile Lube oils are designed to reject foreign contaminants, such as metal fines. If the performance of the oil begins to deteriorate, remove the oil from the machine and allow it to settle in an empty drum or settling tank for 3-7 days. Fines and contaminants will settle to the bottom. After settling, return the top 80% to the clean machine. In order to get the maximum life from your oil, keep the sump free of cleaners, solvents, rust inhibitors, coolants and other contaminants which may inhibit performance.

Cleaning: All Hangsterfer's Cutting Oils are formulated to minimize cleaning time. They are cleanable in both aqueous and solvent systems. For best results use a Hangsterfer's Ozonic series cleaner or recommended aqueous cleaner. Both style cleaners work best when heated to 140°F (60°C).

PRODUCT CHARACTERISTICS

Missile Lube	1	1XL	1XXL	1XXXL
Form	Liquid	Liquid	Liquid	Liquid
Color	Amber	Amber	Amber	Amber
Odor	Mild	Mild	Mild	Mild
Specific Gravity	0.91	0.89	0.84	0.76
Viscosity: SUS @ 100°F	132	70	45	32
cSt @ 40°C	28	13	6	2
Flash Point, COC, °F/°C	420 / 215	335 / 168	290 / 143	219/104
Fire Point, COC, °F/°C	445 / 229	350 / 176	300 / 148	250/121
Pour Point, °F/°C	5 / -15	<0 / -18	<0 / -18	25/-4
Solubility in Water	<0.01%	<0.01%	<0.01%	<0.01%
Boiling Point, °F/°C	450 / 232	392 / 200	392 / 200	453/234
Vapor Pressure, mm Hg @ 25°	<0.01	<0.01	<0.01	<0.01
pH @ 10%	N/A	N/A	N/A	N/A

WASTE TREATMENT

Dispose of in accordance with local, state, federal and international laws. As with most used cutting oils they can often be re-refined or used in energy recovery systems.

SHIPPING UNITS

All Hangsterfer's products are available in pails, drums and Intermediate Bulk Containers (275 or 330 gallons). All products are distributed worldwide.

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