

## MISSILE LUBE® 1, 1 XL, 1 XXL *Straight Oils*

### GENERAL DESCRIPTION

Hangsterfer's Missile Lube series includes high quality and high performance, chlorine-free and sulfur-free oils. The combination of synthetic and vegetable based Extreme Pressure (EP) additives help increase tool life and improve surface finishes in a variety of metalworking operations. Composed of only highly refined raw materials, the Missile Lube series helps keep the machine clean and minimizes operator exposure to mist and smoke.

Offering superior lubrication for the machine tool as well at the tool-workpiece interface, the Missile Lube 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

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, super abrasives, ceramic and silicone carbide.

### MAINTENANCE & CLEANING

*Maintenance:* While 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. Missile Lubes 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 settling 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 Missile Lubes 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 at removing Missile Lubes when heated to 140°F (60°C).

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

### **SHIPPING UNITS**

Missile Lube 1, 1XL and 1XXL are available in 5 gallon, 55 gallon and Intermediate Bulk Containers (275 or 330 gallons). All products are distributed worldwide.

Revised: August 29, 2008

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