

METALON DOWN HOLE TOOL OIL

A METALON/Synthetic Blend

INFORMATION and ASTM/ENGINEERING DATA

METALON/SYN DOWN HOLE TOOL OIL (MSDHTO) provides the ultimate solution to the many obstacles confronting Down Hole Tool Operations. Often times these depths exceed more than 5000 feet.

The DRILLING TOOLS, which vary in “diameter”, are subjected to tremendous pressure and friction causing very high temperatures. These very same factors adversely affect the bearings and races in the TOOL assembly. When this occurs, much time and increased costs are incurred.

METALON PRODUCTS delivers the practical solution.

METALON/SYN DOWN HOLE TOOL OIL, is a formulation composed of the propriety **METALON M** and a high quality Synthetic Oil. This unique blend provides many benefits. The **METALON** in **METALON M** creates a monomolecular, friction and heat reducing, wear-resistant shield that instantly bonds *chemically* with all ferrous and nonferrous metal surfaces, that **will not drain off**. This applies to all the metal components including the bearings and the races increasing their efficiency. The inherent quality of heat reduction of **METALON**, helps to preserve the integrity of the quality Synthetic Oil in this unique, cost-effective blend.

INSPECTION DATA:

(According to ASTM Specifications)

<u>DESCRIPTION</u>	<u>ASTM METHOD</u>	<u>TEST RESULTS</u>
Specific Gravity	D-1298	28.74
Colour	D-1500	Amber
Flash Point °F (°C) (Open Cup)	D-92	474 (245)
Pour Point °F (°C)	D-97	-26 (-31)
Viscosity, SUS @ 100 °F (40 °C)	D-445	2174 (414 cSt)
@ 210 °F (100 °C)	D-445	190 (39 cSt)
Viscosity Index	D-2270	137
Rust Test (Synthetic Sea Water)	D665	1a – Pass
Corrosion Test, Copper Strip	D-130	No Corrosion
TIMKIN OK LOAD	D-2782	> 60 lbs.
FALEX FINAL TORQUE @4500 lb. Jaw Load	D2271	< 60 in. lbs.

NOTE: The information and data presented herein are based on tests, reports and research we believe to be accurate and reliable. The information and data are provided without warranty, guarantee or liability on our part and are therefore, provided to customers for their own investigation, verification and consideration.

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A1:		Company Identification				
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A2:		Chemical Product				
METALON DOWN HOLE TOOL OIL						
PRODUCT NAME		METALON DOWN HOLE TOOL OIL				
CHEMICAL FORMULA		COMPLEX LUBRICANT/METAL CONDITIONER				
PRODUCT FAMILY		ANTI-WEAR FRICTION FIGHTER				
MATERIAL USE		MECHANICAL/METAL SURFACES				
T.D.G. CLASSIFICATION		NOT REGULATED				
B:		Composition/Information on Ingredients			C:	Hazards Identification
Hazardous Ingredients		%	T.L.V.	C.A.S. #	LD/50 Route, Species	LC/50 Route, Species
HYDRO-TREATED LIGHT DISTILLATE		1-3	300 ppm	64742-47-8	8000 mg/kg, ORAL-RAT	>2500 ppm/4H INH-RAT
CHLORO ALKANES		1-4	5 mg/m3	63449-39-8	>4 g/kg ORAL	NOT AVAILABLE
NAPHTHENIC OIL, NOT REGULATED		3-5	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
SYNTHETIC HYDROCARBONS		50-90	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT AVAILABLE
D:		First Aid Measures				
SKIN CONTACT		WASH AFFECTED AREA, REMOVE CONTAMINATED CLOTHING. IF IRRITATION PERSISTS, CONSULT A DOCTOR.				
EYE CONTACT		FLUSH EYES WITH LARGE QUANTITIES OF WATER FOR AT LEAST 15 MINUTES; GET MEDICAL ATTENTION.				
INHALATION		REMOVE VICTIM TO FRESH AIR. IF VICTIM IS NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION IMMEDIATELY. GET IMMEDIATE MEDICAL ATTENTION.				
INGESTION		DILUTE WITH LARGE QUANTITIES OF WATER. DO NOT INDUCE VOMITING. GET IMMEDIATE MEDICAL ATTENTION.				
E:		Fire Fighting Measures				
FLAMMABILITY		NOT APPLICABLE				
IF YES, UNDER WHICH CONDITIONS?		NOT APPLICABLE.				
MEANS OF EXTINGUISHING?		WATER FOG, CARBON DIOXIDE, DRY CHEMICAL, FOAM				
SPECIAL PROCEDURES		KEEP STORAGE CONTAINERS COOL IN FIRE VICINITY FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING				
FLASH POINT °C (°F)		NONE				
AUTO IGNITION TEMPERATURE		NOT AVAILABLE				
UPPER EXPLOSION LIMIT		NOT APPLICABLE				
LOWER EXPLOSION LIMIT		NOT APPLICABLE				
HAZARDOUS COMBUSTION PRODUCTS		OXIDES OF CARBON				
SENSITIVITY TO STATIC DISCHARGE		NO				
SENSITIVITY TO IMPACT		NO, NOT UNDER NORMAL HANDLING CONDITIONS				
F:		Accidental Release Measures				
LEAK/SPILL		SMALL SPILLS				
		STOP FLOW, CONTAIN MATERIAL, COLLECT IN PROPER CONTAINERS. REMOVE ALL SOURCES OF IGNITION. PROVIDE ADEQUATE VENTILATION.				
G:		Handling and Storage				
HANDLING PROCEDURES & EQUIPMENT		HANDLE AN OPEN CONTAINER WITH CARE. HANDLE AWAY FROM ALL SOURCES OF IGNITION. AVOID SMOKING. KEEP CONTAINER CLOSED.				
STORAGE NEEDS		KEEP AWAY FROM HEAT AND FLAME. KEEP FROM FREEZING. STORE AT ROOM TEMPERATURE IN WELL VENTILATED AREA.				
H:		Exposure Controls / Personal Protection				
PROTECTIVE EQUIPMENT						
GLOVES/TYPE		WEAR NEOPRENE GLOVES IF DIRECT CONTACT IS LIKELY				
RESPIRATORY/TYPE		WEARING OF NIOSH MASK APPROVED FOR ORGANIC VAPORS OR (SCBA), IF APPROPRIATE				
EYE/TYPE		SPLASH-PROOF SAFETY GOGGLES				
FOOTWEAR/TYPE		SAFETY BOOTS PER LOCAL REQUIREMENTS				
CLOTHING/TYPE		WEAR ADEQUATE PROTECTIVE CLOTHES				
OTHER/TYPE		EMERGENCY SHOWER AND EYE WASH STATION SHOULD BE IN CLOSE PROXIMITY TO WORK AREA				
ENGINEERING CONTROLS		LOCAL EXHAUST AT POINTS OF EMISSION				

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A2:	Chemical Product		
METALON DOWN HOLE TOOL OIL			
I:	Physical and Chemical Properties		
PHYSICAL STATE	LIQUID	EVAPORATION RATE	NOT AVAILABLE
ODOR/APPEARANCE	MILD ODOR/AMBER, CLEAR	FREEZING POINT	NOT AVAILABLE
ODOR THRESHOLD	NOT AVAILABLE	SPECIFIC GRAVITY	1.015
VAPOR DENSITY (AIR=1)	NOT AVAILABLE	ph	NOT AVAILABLE
VAPOR PRESSURE	NOT AVAILABLE	BOILING POINT	NOT AVAILABLE
VOLATILES: % BY VOLUME	NOT AVAILABLE	SOLUBILITY IN WATER (20 °C)	INSOLUBLE
% BY WEIGHT	NOT AVAILABLE	COEFFICIENT WATER/OIL DIST	NOT AVAILABLE
J:	Stability and Reactivity		
CHEMICAL STABILITY	YES. PRODUCT IS STABLE. HAZARDOUS POLYMERIZATION WILL NOT OCCUR.		
COMPATIBILITY WITH OTHER SUBSTANCES	YES		
REACTIVITY, WHAT CONDITIONS?	NO. WHICH PRODUCTS? STRONG OXIDIZERS AND REDUCING AGENTS		
HAZARDOUS PRODUCTS OF DECOMPOSITION	EXCESSIVE HEAT, STRONG OXIDIZERS, ACIDS AND BASES OXIDES OF CARBON.		
K:	Toxicological Information		
ROUTE OF ENTRY:	POSSIBLE IRRITATION		
SKIN CONTACT	LOW ORDER OF TOXICITY		
SKIN ABSORPTION	IRRITATION		
EYE CONTACT	VAPORS MAY CAUSE RESPIRATORY TRACT IRRITATION, NAUSEA, HEADACHE AND DIZZINESS.		
INHALATION	MAY CAUSE NAUSEA, VOMITING, DIARRHEA, CENTRAL NERVOUS SYSTEM DEPRESSION.		
INGESTION	CONJUNCTIVITIS, TRACHEITIS, DERMATITIS, NARCOSIS.		
EFFECTS OF CHRONIC EXPOSURE	NO EVIDENCE OF ADVERSE EFFECTS		
EFFECTS OF ACUTE EXPOSURE	SEE SECTIONS (B) & (C)		
LD/50 OF MATERIAL, SPECIES & ROUTE	SEE SECTIONS (B) & (C)		
LC/50 OF MATERIAL, SPECIES & ROUTE	SEE SECTIONS (B) & (C)		
EXPOSURE LIMIT OF MATERIAL	SEE SECTIONS (B) & (C)		
IRRITATION CAUSED BY MATERIAL	SEE EFFECTS OF ACUTE EXPOSURE, SEE ROUTE OF ENTRY		
SENSITIZING CAPABILITY OF MATERIAL	IN SUSCEPTIBLE INDIVIDUALS		
CARCINOGENICITY OF MATERIAL	NONE KNOWN		
REPRODUCTIVE EFFECTS	NONE KNOWN		
MUTAGENICITY	NONE KNOWN		
TERATOGENICITY	NONE KNOWN		
SYNERGISTIC MATERIALS	NONE KNOWN		
L:	Ecological Information		
LEAK/SPILL	LARGE SPILLS:	PREVENT RUN-OFF INTO DRAINS, SEWERS AND WATERWAYS. WEAR PROTECTIVE EQUIPMENT TO PROTECT AGAINST HAZARDS & DISPOSE AS PER APPROVED LOCAL WASTE DISPOSAL METHOD. FOLLOW INSTRUCTIONS FOR SMALL SPILLS	
M:	Disposal Considerations		
WASTE DISPOSAL, METHOD & EQUIPMENT	IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS.		
N:	Transport Information		
T.D.G. CLASSIFICATION:	NOT REGULATED		
O:	Regulatory Information		
THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.			
P:	Other Information		
NOTE: This information and data are based on tests, reports and research we believe to be accurate and reliable. It is provided herein without warranty, guarantee or liability on our part, and are therefore provided to customers for their own investigation, verification and consideration.			