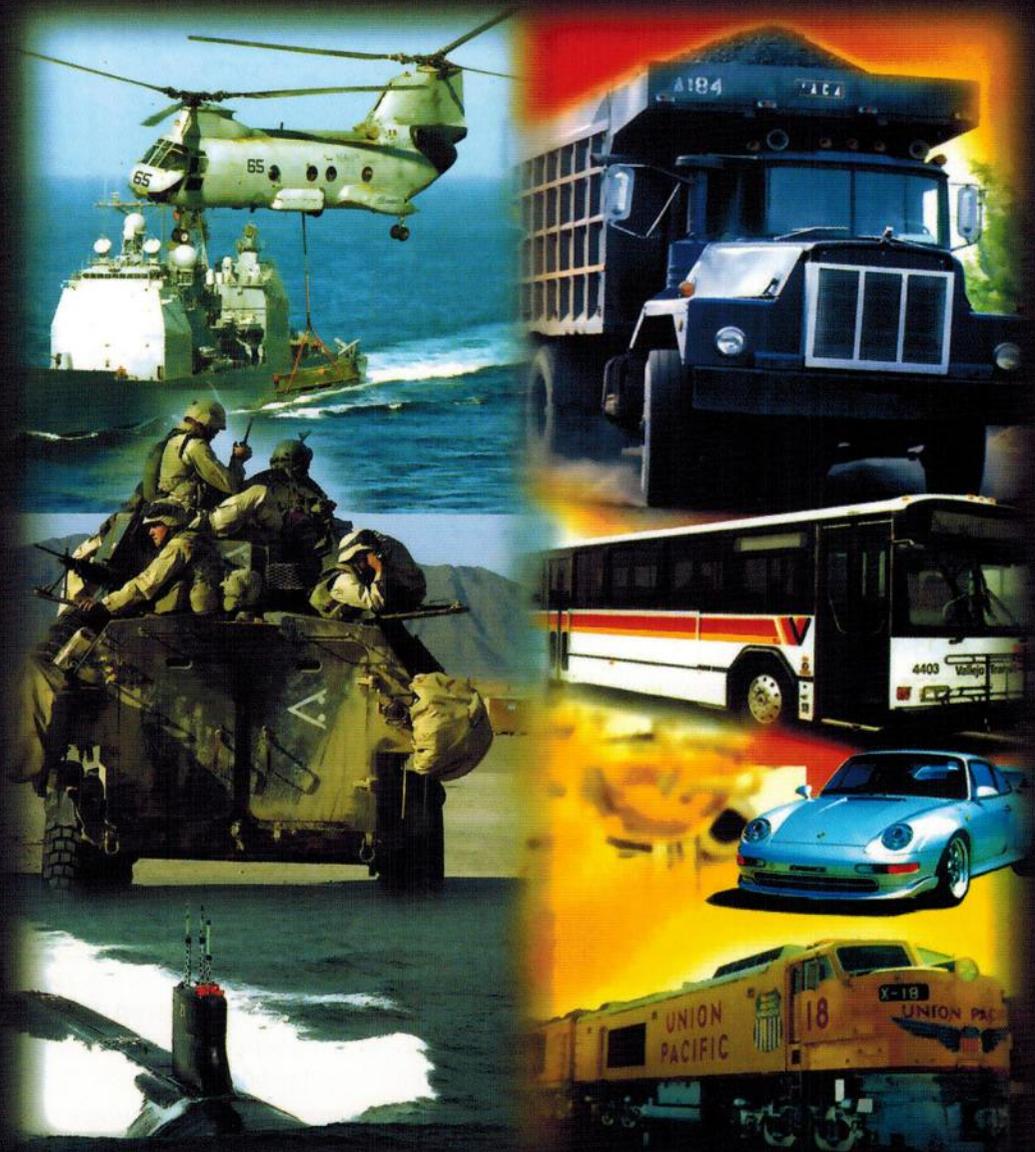




**MSP**

***Xtreme Lubricants***

MOLECULAR SCIENCE PRODUCTS



**A Secret  
Formula  
For  
Helicopters,  
Tanks And  
Submarines Now Gives Your Vehicle And  
Equipment The Same Tough Performance  
And Protection.**

**Scientific Breakthrough In Micro-Lubrication Technology  
Tested & Proven Under Most Extreme Operating Conditions**



MSP MTC (Metal Treatment Concentrate) is the ULTIMATE LUBRICANT ENHANCER that coats all metal surfaces with an IONIZED micro-layer of oil molecules and through metallurgical process forms (from the original metal) a durable polished-like micro-layer of hard metal that dramatically resists wear, extreme pressure and excessive temperature. Metal surfaces remain treated at all times, which provides for immediate start-up protection. Friction is substantially reduced, wear is eliminated - up to 95%, which results in much longer equipment life, improved performance, and oil and fuel economy.

MSP (MTC) is 100% Petroleum based, free of Solid Particles that cause harmful build-up

MSP (MTC) is compatible with all motor oils, gear oils, transmission fluids and other lubricants.

MSP MTC contributes to reduction in noise level and to lower operating temperature. Improve engine's compression.

MSP MTC is an excellent dispersant which dissolves any existing deposit buildup and holds sludge harmlessly in suspension while preventing the deposition of varnish and lacquer on engine parts in severe service. Oil filter life is extended 4 to 7 times and the PCV (Positive Crankcase Ventilation) valve remains free and clean. This quality also contributes to much longer engine life and fuel economy. 10% of MSP MTC will ensure complete clean-up of the engine from carbon deposits, sludge and varnish thereby ensuring very clean and smooth engine operation.

### Elimination of wear and deposit build-up results in extension of oil change intervals 4 to 7 times.

In most applications MSP MTC contributes to up to 65% reduction in direct expenses and maintenance costs.

### Direct Benefits Resulting From Use of MSP

- \* Eliminates up to 95% of engine/equipment wear
- \* Extends maintenance intervals 4 to 7 times
- \* Keeps the engine /equipment parts completely clean
- \* Lowers operating temperature and noise level
- \* Protects engine/equipment across wider range of temperatures
- \* Protects engines/equipment in the event of lubricant loss.

## Today's Most Technologically Advanced METAL TREATMENT for Motor Oils and other Lubricants

### RECOMMENDED FOR:

- Motor oils - Transmission fluids
- Hydraulic oils - Compressor oils
- Arbor and form oils - Way oils
- CP oils - Gear lubes - Cutting oils.

### GENERAL APPLICATIONS

Internal combustion engines and Diesel engines: cars, trucks, rail road, marine etc. - Automatic and manual transmissions - Differentials and gearboxes - Bearings and bearing journals - Power steering units - Pumps - Air compressors - Cooling systems - Hydraulic power systems in Heavy duty off road equipment and Farming machinery - Mining and smelter equipment - Railroad equipment - Oil and Water wells Drilling equipment - Machine shops equipment: (grinding, drilling milling etc.) - Air tools - Marine light and Heavy Duty Vessels

### DIRECTIONS:

1. In Gasoline or Diesel engines, add one 16 oz bottle to a standard 4 to 5-qt crankcase, or approx. 10% by volume to any larger crankcase during an oil change. If used for the first time, apply it at least 200 miles before the next oil change, then apply it again in the next oil change. If oil change intervals are as per the car manufacturer's instructions, apply MTC every other oil change. In "Extended" Oil Change Intervals, (10,000 to 20,000 miles) add MTC every oil change.
2. Automatic Transmissions Fluid: add 5%
3. Manual Transmissions Fluid: add 10%
4. Hydraulic Systems: add 10%
5. 2-Cycle Engine Oil: add 10%
6. Gear Boxes: add 10%
7. Bearing Journals: add 10%

## MSP USER REFERENCES

### MSP - USER REFERENCE # 1

Application: MSP MTC package for motor oil.

User: Transit-cab company in California.

*Reference letter written by the Maintenance Manager.*

"As you know, we have been incurring serious maintenance problems with our fleet of 200 transit-cab vehicles. On average, we have had 13 cabs per day in for an engine overhaul or replacement.

The down time, parts and labor costs have been excessive. In an effort to reduce these costs we began to experiment with various motor oils and additives packages to reduce wear and improve performance, but with not much success. We still had an average of 13 cabs down each day.

We then tested your MSP MTC in nine of our units. To say the least we are quite pleased with the results. Before adding MSP MTC, the compression reading of each vehicle was taken and found to be between 90 and 150. All had engines with problems or expected to have in a short time, these units had poor performance and fuel consumption.

The cabs were treated with MSP MTC according to instructions and road-tested for two days with the following results:

1. Compression readings ranged between 149 and 154 (Note, 154 is equivalent to that expected from a brand new engine).
2. Increased power and performance were reported by the drivers.
3. The MSP MTC treated cabs ran quieter and smoother.
4. The average operating temperature was reduced by 20 degrees (190 to 170).
5. Drivers reported mileage improvement.
6. An engine treated with MSP MTC was disassembled and inspected. It was found clean, had no build-up and the surfaces appeared to be polished.

As a result of the above referenced results, we are now using your product in our entire fleet."

Since using MSP MTC we have not had one engine go down. When considering these vehicles are driven an average of 500 miles per day, under the most severe of conditions, the results are nothing less than remarkable. Within the first 6 weeks of using MSP MTC on the average had only one vehicle in the repair shop per day.

After several months we have inspected 5 engines. The following pictures demonstrate the dramatic effect MSP MTC had on our vehicles, this of course resulted in considerable reduction in maintenance cost. The pictures were taken from the same engines before we started using MSP MTC and after using MSP MTC for several months.

## MSP MTC APPLICATIONS

As an Metal Treatment to Single Grade motor oils and Multigrade heavy duty Motor Oils that meet and exceed industry API Service Classification SJ/CG-4 (add 10% by volume):

SAE 10W, 20W, 30W, 40W, SAE 50W, 5W-30, 10W-30, 10W-40, 15W-40, 20W-40/50.

Used in: \*Farm machinery \*Construction Equipment \*Other off-highway applications \*Heavy Duty and Light Diesel Trucks \*Diesel/Gasoline passenger cars \*Pumps \*Diesel/Gasoline motor driven Electrical Generators \*Diesel Marine Engines (such as Sulzer, Baldwin and ALCO) \*Mining Equipment \*Two-cycle engines \*Torque Converters \*Forestry Equipment. AND MANY MORE NORMAL AND SEVERE SERVICE APPLICATIONS.

As a Metal Treatment to Manual / Automatic Transmission and Torque Fluids (add 5-6% by volume) in light and heavy duty Applications. Under Ford Specifications M2C33-F and M2C138-CJ. General Motors DEXRON-III, Ford MERCON, Daimler-Benz, Allison C4 Fluid and Voith DIWA Transmissions, for use in passenger cars and light trucks. Fluids meeting Caterpillar TO-4, TO-2 or Ellison C4. All in heavy duty applications.

Torque Fluids for use in Allison Powershift transmissions, Torque converters requiring Allison Type C4 fluid. Heavy-duty truck and tractor automatic transmissions. Meeting requirements of AGCO, John Deere J20C; Ford New Holland, ESN-M2C134-D, FNHA-2-C-201, Massey Ferguson M1135, M1141, M1127, M1129A; White Farm Equipment, Q-1826; Case Corporation, JIC-143, JIC-145, MS 1206, MS 1207; Oliver Type 55; Minneapolis-Moline Fluids; Renk, Bus Automatic Transmission Fluid; Allison C4.

As an additive package to Tractor hydraulic fluids Meeting requirements of AGCO, John Deere J20C; Ford New Holland, ESN-M2C134-D, FNHA-2-C-201, Massey Ferguson M1135, M1141, M1127, M1129A; White Farm Equipment, Q-1826; Case Corporation, JIC-143, JIC-145, MS 1206, MS 1207; Oliver Type 55; Minneapolis-Moline Fluids; Renk, Bus Automatic Transmission Fluid; Allison C4.

## \* As a metal treatment to Industrial Oils (add 10% by volume)

**Mineral / synthetic Compressor Oils (ISO 32, 68, 100) for:** -portable and stationary rotary vane and screw compressors - single stage, two stage, and multistage reciprocating compressors from but not limited to Ingersoll-Rand, Quincy, Sullair, Atlas Copco and Gardner-Denver

**Way Oils** (add 10% by volume) for : lathers, planers, shapers, drilling and tapping machines - enclosed gears - industrial plain and antifriction bearings- lubrication of chain drives.

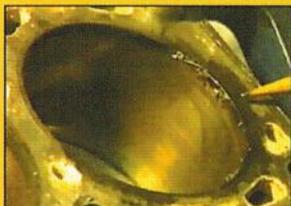
**Chain Bar Oils for:** - chainsaws with either hand operated or automatic chain oilers to lubricate the chain, bar and sprocket - chain drivers on: straddle lift lumber carriers - motorcycle chains lawnmowers - farm equipment.

**Machine Oils (add 10% by volume):** - reduction gears - reciprocating air compressors - plain and antifriction bearings - electric motor bearings - air compressors - high speed gears - for gear lubrication.

**Gear Oils:** - rear axles - transmissions - differentials - spiral bevel - power dividers - steering axle wheel bearings - open gears - wire ropes and cables. All the grades provide lubrication for mining equipment. Metalworking Cutting Fluids and Oils (add 10%-20% by volume) resulting in: much lower tool wear - much smoother surface finish - prevention of welding (sticking to the cutting tool) in ferrous and non-ferrous metals (especially - Aluminum) .

Direct benefits resulting from use of MSP MTC:

ELIMINATES UP TO 95% OF ENGINE / EQUIPMENT WEAR - EXTENDS MAINTENANCE INTERVALS 4 to 7 TIMES - LOWERS FUEL AND OIL CONSUMPTION - KEEPS THE ENGINE / EQUIPMENT PARTS COMPLETELY CLEAN - LOWERS OPERATING TEMPERATURE AND NOISE LEVEL- PROTECTS ENGINE / EQUIPMENT ACROSS A WIDE RANGE OF TEMPERATURES.- PROTECTS ENGINES / EQUIPMENT TEMPORARILY, IN THE EVENT OF LUBRICANT LOSS.



Sludge and carbon build-up we always found on cylinder walls of all our vehicle-engines before we started using MSP MTC



With MSP MTC, the cylinder walls are always clean from any build-up, and look highly polished



Heavy carbon deposit on a piston top, on and around piston rings which caused the rings to "freeze" and even break.



A typical condition of pistons and piston rings after we started using MSP MTC products with extended oil change intervals from every 2000 miles to every 10,000 miles.

We had one vehicle lose all its oil at LAX. The driver was unaware of the situation because the oil pressure light was not working. He drove back to our Van Nuys facility without incident. Our mechanic after noticing that there was some oil dripping, found that the oil pan was slashed and there was no oil. The pan was replaced, new oil installed and the engine started right up. This vehicle is still in daily operation." If it hadn't been for MSP MTC the engine would have seized up and we would have to overhaul it.

### MSP - USER REFERENCE # 2

**Application:** Air Tools lubrication. **User:** Steel Casting Facility in Indiana State (Reference letter written by the company's V.P.).

The decision was made to mix MSP MTC with our industrial oil and fill all of our air tool oilers and measure the effect on repair. The amazing results below show very gratifying savings.

**Without MSP MTC:** For six months of 1996 January to June 30th Cost of spare parts for air tools was: \$862.00 per month  
Labor for repair was: \$1,506.00 per month  
TOTAL: \$2,369.91 per month  
Or \$28,438.92 per year

**With MSP MTC:** There has been no maintenance performed but to fill the oilers. Taking into consideration the cost of MSP MTC that was used per year the savings for the year was \$25,300.

### MSP - USER REFERENCE # 3

**Application:** Air - Compressors lubrication • **User:** Steel Casting Facility in Indiana State

(Reference letter written by the company's V.P.)

**Without MSP MTC:** The oil temperature of PAC 250 screw compressor was running 192 degrees, and its air up to 240 degrees and than shutting off. We had the air and the oil coolers of the compressor serviced, but it continued to automatically shut-off about every one and a half hours. It then stayed off until it cooled down, about one and a quarter hours. The compressor holds 180 quarts of premium oil to the full mark, priced at \$7.08 per quart ( so the cost of an oil change was \$1,274.40). We were changing the oil very often to reduce the down time.

**With MSP MTC:** We replaced the premium oil with a mixture of industrial oil (165 quarts, \$0.88 per quart) blended with approx 8% of MSP MTC (15 quarts). The total cost of the replacing mixture of the industrial oil and MSP MTC was: \$450.00  
The oil temperature was reduced from 192 to 160 degrees and the air temperature was reduced from 240 to 200 degrees, and no more shutdowns occurred. Since the industrial oil and MSP MTC mixture lasted 15 times longer before we changed it, the savings on the oil alone was more than \$19,000, in addition to the considerable savings as a result of almost complete elimination of downtime.

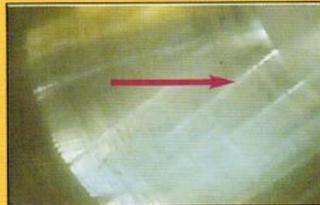
User: Overseas Quarry.

**Reference letter written by the General Manager of the quarry.**

"This 1000 KVA Cummins Generator driven by 1,800 horse power engine was in service for more than 30,000 hours. According to the manufacturer's instructions, oil and oil-filters had to be replaced every 250 hours. We started using MSP after the generator was in service for about 5,000 hours. Within very short time of using MSP MTC and Fuel Conditioner, we experienced an average of 10% reduction in fuel consumption. Based on used oil analysis we decided to extend the oil change intervals to every 1,000 hours and then to every 1,500 hours. Typically, this type of engine is overhauled every 17,000 hours in operation. In this specific case the engine was taken apart after 30,000 hours not because it had to be overhauled but because of penetration of water into its oil system. In spite of the water, there was no indication whatsoever that the engine was deteriorating in performance. Nevertheless, after 100 hours in operation with water presence in the oil system, I decided not to take any chances and send it to a repair shop to be taken apart. I was so deeply impressed when the owner of the repair shop informed me that there must have been a mistake in the paperwork, because the engine parts looked like new, I decided to invite the local distributor and the US manufacturer to produce a video tape of the engine parts to use as a reference with my highest recommendations for MSP products. The engine was put together without replacing or machining any parts. According to our most conservative estimate, over 30,000 hours that the generator was in operation, the user saved at least \$150,000 on repairs, fuel and oil consumption and spent only \$7,690 on MSP products, a return of approximately \$20 on each dollar invested in MSP..."



All the liners were micro-measured. There was no wear whatsoever, all the dimensions were within the manufacture's specs of a new engine.



In all the liners you could see distinct traces of the cross-honing pattern of the original bore (pink arrow), and the liner surfaces looked "polished - like and shiny.



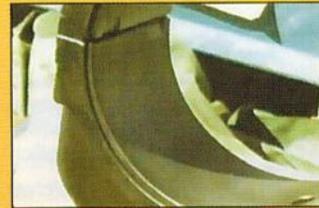
After 30,000 hours in operation and 100 hours in the presence of water, all the piston pins didn't have any traces of wear, looked polished-like and new.



After 30,000 hours in operation and 100 hours in the presence of water Piston-pin bearings didn't have any wear and looked like new.



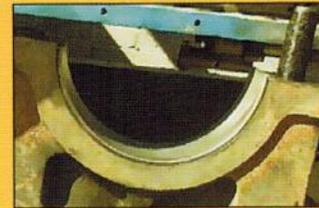
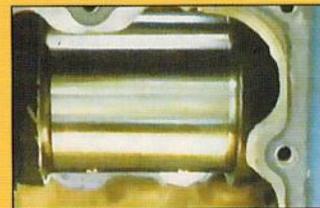
All the pistons had piston skirts and piston rings totally clean of any build-up. The rings looked like new and didn't have any wear whatsoever.



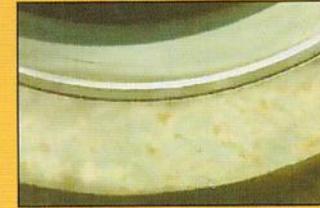
After 30,000 hours in operation and 100 hours in the presence of water, all the connecting-rod bearings didn't have any traces of wear, maintained their full thickness and their coating. Looked like new.



We micro-measured the crankshaft and found it to be in great condition. Totally round, no traces of wear. It didn't need any machining.



Crankshaft Main Bearings, there was no trace of wear. They maintained their original coating. Usually after 17,000 hours they are chewed up. In this engine we used MSP MTC, there was almost no wear after 30,000 hours.



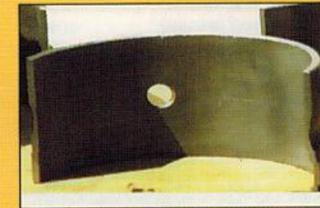
Cylinder liner from a 16,000 hours old engine (without MSP MTC) Scuffed and scored.



Cylinder liner from our 30,000 hours old engine with MSP MTC. Totally clean with almost no wear at all.



Piston-rod bearing from a 16,000 hours old engine (without MSP MTC) chewed up as a result of wear.



Piston-rod bearing from our 30,000 hours old engine with MSP MTC. Totally clean with almost no wear at all.

The following 2 reports confirmed that the long term performance of Motor Oils containing MSP MTC surpasses many fold the performance of any other motor oils, resulting in extended oil change intervals (4 to 7) times, and elimination of up to 95% of engine wear. There are many more outstanding feature that make MSP MTC so unique.

## 1. Light Duty Engines, API Service Category SL with MSP MTC

TEST DESCRIPTION	Requirement	Test Result Reference Motor Oil XXX... 10W-30 / 15W-40	Test Result Reference Motor Oil With MSP MTC
<b>Sequence IIIF (Wear and oil thickening)</b>			
a. Kinematic viscosity, increase at 40°C	max, 275%	80% to 90%	55% to 62%
b. Average piston skirt varnish rating	min, 9.0	9.2 to 9.4	9.6 to 9.8
c. Low temperature viscosity after 80 hours	report		
d. Weighted piston deposit rating	min, 4.0	4.5 to 4.7	5.8 to 6.1
e. Screened average cam-plus-lifter wear	max, 20µm	9.2µm to 10.1µm	2.3µm to 2.5µm
f. Hot Stuck Piston Rings	none	none	none
g. Oil consumption	max, 5.2 liters	3.5 to 4.0 liters	1.2 to 1.5 liters
<b>Sequence VG, (Sludge and varnish)</b>			
a. Average engine sludge rating	min, 7.8	9.0 to 9.2	9.6 to 9.8
b. Rocker cover sludge rating	min, 8.0	9.0 to 9.2	9.4 to 9.6
c. Average engine varnish rating	min, 8.9	9.4 to 9.6	9.6 to 9.8
d. Average piston skirt varnish rating	min, 7.5	9.0 to 9.2	9.6 to 9.8
e. Oil screen clogging	max, 20%	9% to 10%	2% to 3%
f. Hot stuck compression rings, #	none	none	none
g. Cold stuck rings, #	Rate and report	none	none
h. Oil screen debris, %	Rate and report	4% to 5%	0%
i. Oil ring clogging, %	Rate and report	23% to 25%	2% to 4%
<b>Sequence VE, (Cam wear)</b>			
a. Average cam wear	max, 127µm	23µm to 25µm	3µm to 4µm
b. Maximum cam wear	max, 380µm	26µm to 28µm	3.5µm to 4.5µm
<b>Sequence IVA, (Valvetrain wear)</b>			
a. Average cam wear (7 position avg.)	max, 120µm	15.4µm	4.3µm
b. Maximum cam wear	max, 380µm	17.8µm	5.1µm
<b>Sequence VIII, (Bearing corrosion)</b>			
a. Bearing weight loss	max, 26.4mg	20mg to 21mg	4.6mg to 4.8mg
<b>BRT, (Ball Rust Test, ASTM D6557)</b>			
a. Average Gray Value (AGV)	min, 100 AGV	128 to 130	152 to 155
<b>Volatility loss</b>			
a. Volatility loss (ASTM D5800)	max, 15%	10% to 11%	10% to 11%
<b>EOFT (Engine Oil Filterability Test)</b>			
a. Flow reduction	max, 50%	10% to 15%	7% to 8%
<b>EOWTT (Engine Oil Water Tolerance Test)</b>			
a. Flow reduction with 0.6% H <sub>2</sub> O	max, 50%	12% to 15%	7% to 8%
b. Flow reduction with 1.0% H <sub>2</sub> O	max, 50%	13% to 17%	7% to 8%
c. Flow reduction with 2.0% H <sub>2</sub> O	max, 50%	16% to 18%	8% to 9%
d. Flow reduction with 3.0% H <sub>2</sub> O	max, 50%	21% to 25%	8.5% to 9.5%
<b>TEOST (MHT4)</b>			
a. Total Deposits	max, 45mg	30mg to 32mg	15mg to 17mg

## 2. Heavy Duty Engines, API Service Category CH4/CI-4 (Motor Oils) with MSP MTC

TEST DESCRIPTION	Requirement	Test Result Reference Motor Oil XXX... 10W-30 / 15W-40	Test Result Reference Motor Oil With MSP MTC
<b>RFWT (Roller Follower Wear Test ) (D5966)</b>			
a. Avg. pin wear	max, 7.6µm, 0.30mg	0.28 to 0.31mg	0.09 to 0.11 mg
<b>Sequence IIIF (Wear and oil thickening)</b>			
a. Kinematic viscosity, increase at 40°C	max, 275%	80% to 90%	45% to 51%
b. Average piston skirt varnish rating	min, 9.0	9.2 to 9.4	9.5 to 9.8
c. Low temperature viscosity after 80 hours	report		
d. Weighted piston deposit rating	min, 4.0	4.5 to 4.7	5.9 to 6.3
e. Screened average cam-plus-lifter wear	max, 20µm	9.2 µm to 10.1µm	3.1µm to 3.5µm
f. Hot Stuck Piston Rings	none	none	none
g. Oil consumption	max, 5.2 liters	3.5 to 4.0 liters	1.5 to 1.8 liters
<b>EOAT</b>			
a. Oil Aeration	max, 8%	7.6 to 7.8%	7.6 to 7.8%
<b>Cummins M-11EGR (M11 High Soot Test with EGR)</b>			
a. Crosshead weight loss	max, 20.0mg	10.2 to 11.0mg	3.8 to 4.1mg
b. Top Ring Weight Loss	max, 175mg	110.1 to 112.3mg	32.5 to 38.3mg
c. Engine sludge	min, 7.8 merits	8.2 to 8.5 merits	9.3 to 9.6 merits
d. Oil Filter Delta Pressure at 250 hours	max, 275 Kpa	272 to 274 Kpa	254 to 257 Kpa
<b>Caterpillar 1N</b>			
a. WDN Piston Demerits	max, 286.2	248.5 to 251.0	172.0 to 180.0
b. Top Grove Fill	max, 20%	8 to 8.5%	2.3 to 2.8%
c. Top Land Heavy Carbon	Max, 3%	0%	0%
d. Oil Consumption (0-252 hours)	max, 0.5g/kW-h	0.13 to 0.14g/kW-h	254 to 257 Kpa
e. Piston Ring and Liner Scuffing	none	none	none
<b>Mack T8E (ASTM D5967)</b>			
a. Relative Viscosity at 4.8% soot	max, 1.8	1.51 to 1.54	1.51 to 1.54
<b>Mack T10 (with EGR)</b>			
a. Merit Rating	min, 1000	1151 to 1162	1238 to 1254
<b>Caterpillar 1R</b>			
a. WDR Piston Demerits	max, 382 demerits	335.4 to 348.0	215.0 to 219.0
b. Top Grove Fill	max, 52 demerits	50 to 51.5	34 to 37.2
c. Top Land Heavy Carbon	max, 31 demerits	29.5 to 31.0	14.2 to 17.4
d. Initial Oil Consumption	max, 13.1g/h	12.8 to 13.00g/h	12.3 to 12.6g/h
e. Final Oil Consumption	max, IOC+1.8g/h	IOC+1.6g/h	IOC+1.4g/h
f. Piston ring and liner scuffing	none	none	none
g. Ring Sticking	none	none	none
<b>Foam Test (ASTN D892, Foaming/Setting)</b>			
a. Sequence I	max, 10/0	5/0 to 6/0	5/0 to 6/0
b. Sequence II	max, 20/0	10/0 to 12/0	10/0 to 12/0
c. Sequence III	max, 10/0	5/0 to 6/0	5/0 to 6/0
<b>Volatility</b>			
a. Loss at 250°C	max, 15%	9.0 to 9.2%	8.4 to 8.6%
<b>MRV TP-1 (Low Temperature Pumpability)</b>			
a. Viscosity of 75 hours used oil sample from T-10 test at -20°C	max, 60000cP	18500 to 19200 cP	16300 to 17250 cP
<b>HT/HS (High Temp / High Shear Stability)</b>			
a. Viscosity, as allowed in SAE J300,	min, 3.5mPa-s	3.67 to 3.71mPa-s	3.70 to 3.82mPa-s
<b>Shear Stability (ASTM D6278)</b>			
a. After Shear Viscosity 10W-30,	min, 9.3cSt	10.2 to 10.6cSt	10.0 to 10.6cSt
b. After Shear Viscosity 15W-40	min, 12.5cSt	14.6 to 14.9cSt	15.1 to 15.4cSt



**SUBJECT - COMPARISON TESTING OF ENGINE TREATMENTS**

**REFERENCE:**

Cal-Labs, Certificate of Calibration dated August 23, 1995 for Client submitted Proto torque wrench, Model Number 6075, Serial Number D 95.

**SAMPLE DESCRIPTION:**

The Client submitted and identified one unopened container of each of the following Engine Treatments:

- A: XXX...
- B: XXX...
- C: XXX... (synthetic)
- D: XXX... (4-Cylinder)
- E: MSP

The samples were submitted on August 24, 1995.

**OBJECTIVE:**

The purpose of this project was to witness and document results of comparison cross-axis friction testing of the submitted engine treatments.

*Handwritten signature*

Signed for the Company:

*Handwritten signature*

United States Testing Company, Inc.

720121-7  
09/06/95

**RESULTS:**

Specimen	Maximum Force (ft-lb)	Area of Carved Ellipse (in <sup>2</sup> )	Notes
A: XXX...	40	0.122	Loud squeaking during test; some metal from bearing remained welded on race.
B: XXX...	40	0.113	Loud squeaking during test; some metal from bearing remained welded on race.
C: XXX... (Synthetic)	41	0.108	Loud squeaking during test; some metal from bearing remained welded on race.
C: XXX... (Synthetic, with sand and water)	36	0.108	Loud squeaking during test; some metal from bearing remained welded on race.
D: XXX... (4-Cylinder)	38	0.103	Loud squeaking during test; some metal from bearing remained welded on race.
E: MSP			
• comparison:	45	0.010	Displacement of metal on bearing, no damage to bearing; polished track remained on race.
• maximum:	150	0.022	Displacement of metal on bearing; polished track remained on race.
• sand and water	140	0.042	Displacement of metal on bearing; polished track remained on race; smoking was noticed at 100 ft-lb

United States Testing Company, Inc.

720121-7  
09/06/95

**PROCEDURE:**

The Client supplied a cross-axis friction testing machine, including a calibrated torque wrench. The machine utilized a hand-operated torque wrench to force a non-rotating bearing onto a coated, spinning race.

Prior to testing, the race was smoothed by turning the machine on and applying a piece of 3M 011K Crystal Bay Course sandpaper to the spinning race. A new bearing, randomly selected from a bag of bearings supplied by the Client, was secured in its holder and affixed to the machine, above the race, but not engaged.

The machine was turned on and the engine treatment sample was placed onto the spinning race with a spoon, allowing it to become fully coated with engine treatment. The bearing was then allowed to contact the race, and forced downward onto the race at a uniform rate, using the torque wrench, until the machine seized up, signaling that the bearing had welded to the race.

If machine seizure occurred, the force on the bearing was released and the bearing was separated from the race. The maximum load and time of seizure were recorded.

At the conclusion of the test, the race was smoothed and cooled with water, a new bearing was affixed to the machine, and new engine treatment was tested as outlined above.

The damage resulting from the friction test was recorded as the area of the two-dimensional ellipse carved out of the surface of the bearing. The area of the ellipse was determined from the length and width of the carved ellipse as measured along the surface of the bearing.

The procedure was repeated on specific samples using sand and water mixed with the engine treatment.

Testing was performed on August 24, 1995.



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PSB Corporation

**RESULTS :** Engine Oil mixed with MSP (Molecular Science Products)

Test	Vehicles No.	New Toyota Vios SDZ7411S		Old Volvo B50GLE SBZ9120S	
		Date: 2003-11-12 Mileage: 6674 km	Date: 2004-01-29 Mileage: 14661 km	Date: 2003-11-12 Mileage: 277811 km	Date: 2003-11-21 Mileage: 278554 km
1) Kinematic Viscosity at 40°C (cSt)		111	113	136	131
2) Flash point (FMCC)		136	134	98	90
3) Moisture, ppm m/m		148	180	135	140
4) Total Acid Number (TAN) (mg KOH/g)		0.009	0.009	0.009	0.008
5) Ash (at 850°C), % ash		0.71	0.76	0.96	0.55
6) Carbon dioxide (CO <sub>2</sub> ), %		7.8	1.5	7.4	2.0
7) Carbon Monoxide (CO), %		0.54	0.54	0.53	0.55
8) Hydrocarbon (CH <sub>4</sub> ), ppm		30	5	52	13
9) Iron (Fe), ppm m/m		3.4	2.2	5.2	14
10) Aluminium (Al), ppm m/m		2.7	0.77	Less than 0.5	Less than 0.5
11) Silicon (Si), ppm m/m		51	50	67	15
12) Chromium (Cr), ppm m/m		Less than 0.5	Less than 0.5	Less than 0.5	Less than 0.5
13) Nickel (Ni), ppm m/m		Less than 0.5	Less than 0.5	Less than 0.5	Less than 0.5
14) Zinc (Zn), ppm m/m		327	37	73	354
15) Boron (B), ppm m/m		26	5.8	37	4.1

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ENGINEERING DEPARTMENT

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ENGINEERING DEPARTMENT

# MSP FORMULA 2-6-8



## Today's Most Technologically Advanced Power Steering-Differential-Transmission treatment formula

### DIRECTIONS:

**Power-Steering:** While the engine is running, add 2 oz of FORMULA 2-6-8 to the Power-Steering fluid Container. If the container is full, take out 2 oz of the fluid and then add FORMULA 2-6-8.

**Differential:** If your vehicle's Differential can be installed with the help of our accredited service workshops, add 6 oz of FORMULA 2-6-8 Treatment to the Differential fluid. If the Differential cannot be serviced (has a sealed System, you can use the remaining 6 oz of the FORMULA for the future service of the Transmission.

**Transmission:** While the engine is running add 5% for **Automatic** Transmission. (For **Manual** Transmission add 10%)

Formula 2 - 6 - 8 has identical characteristics and features to those of MSP MTC but is conveniently packaged for use in power steering units (2 OZ), differentials (6 OZ), and transmissions (8 OZ) of passenger cars, SUVs and pickup trucks. (Refer to directions)

# MSP GDFC



## Today's Most Technologically Advanced Fuel Conditioner

### GENERAL APPLICATIONS

All Diesel and Gasoline engines in:

- passenger cars
- SUVs and pickup trucks
- heavy duty trucks
- tractors
- irrigation systems
- pumps
- oil field equipment
- marine vessels
- railroad AND MANY MORE applications....

### DIRECTIONS:

For regular use, add 1 ml per liter of gasoline or diesel fuel.

In two-cycle engines, add 1 ml per liter of fuel before blending with oil.

For Larger Engines and Boiler Systems, first time apply 1 ml per liter of Fuel to accelerate the cleanup of the fuel system and reduction of exhaust emissions. Then apply 1 ml of GDFC to every 2 liter of fuel to maintain the fuel system.

MSP Ultra Performance GASOLINE / DIESEL FUEL CONDITIONER (GDFC) is scientifically designed for much cleaner and more efficient fuel combustion. It also cleans and lubricates the working parts of the fuel system and the upper part of the engine. MSP GDFC dissolves and removes carbon deposits and prevents future harmful build-up. MSP GDFC improves mileage and overall engine performance.

MSP GDFC cleans entire fuel system, including injectors, intake valves, ports, valve seats and combustion chamber. When used regularly, exhaust pollutants are reduced considerably. MSP GDFC extends the effective life of diesel fuel held in storage tanks and can be used with any gasoline or diesel fuel.

### MAIN CHARACTERISTICS

- Maximizes mileage & performance - Maximizes power & compression - Cleans entire fuel system including injectors - intake valves - ports - valve seats and combustion chamber - Provides quicker starting in cold weather - Provides lubrication to Fuel Ports System - Neutralizes water in fuel tank and lines.

Improve poor quality fuel - it is fully compatible with diesel and gasoline fuels and fuel oils.

**For best results use it together with MTC** Contributes to much cleaner emissions.

PETROL  
CONDITIONER  
LABORATORY  
REPORT

Test Sample	Carbon Monoxide %	Carbon Dioxide %	Hydrocarbon Emission ppm
XXX Injector Cleaner & Conditioner	1.99	18.09	435
Standard Pump Petrol	0.07	19.82	195
MSP Fuel Conditional	0.01	1.8	50

### USER REFERENCE # 1

Application: Reduction of emissions  
 User: Used Cars Wholesale Company in California.

*(Letter written by the general manager of the company's machine shop).*

"The results of using MSP Fuel conditioner and MTC are nothing short of outstanding. In most of the cars that had excessive emissions and smoke problems we have eliminated or considerably reduced them by just using MSP Fuel conditioner or in some cases together with MSP MTC. The following video stills represent a video footage of an exhaust of a car that was heavily smoking and we were sure that we had to overhaul the engine in order to fix the problem. But to our amazement after applying MSP Fuel Conditioner together with MSP MTC the smoke disappeared within a few minutes. I have never seen such a powerful combination of products"



This time-lapse photography shows how the amount of smoke coming out of the exhaust of the above referenced vehicle is reduced almost to nothing within only few minutes of adding MSP GDFC and MSP MTC.

### USER REFERENCE # 2

Application: Mileage Improvement in passenger cars.  
 User: Used cars dealership in Florida

*(Reference letter written by the dealership's General Manager)*

"The following table is representative of the major difference that the use of MSP GDFC and MSP MTC makes in fuel consumption.

#### 1991 Lincoln Town Car - July 1995

Trip without MSP		
Miles Traveled	Fuel Used (Gal)	Miles per Gallon
272.20	12.20	22.30

Trip with MSP GDFC + MTC			
Miles Traveled	Fuel Used (Gal)	Miles per Gallon	Improvement
284.30	11.30	25.10	12.5%
401.60	14.70	27.30	22.0%
309.20	10.80	28.60	28.2%
306.10	10.20	30.00	34.5%

The performance gets better and better with mileage until it reaches peak performance.

### USER REFERENCE # 3



Dragster Racing-Car Driver, Engine Builder and Automotive Instructor.

I've been monitoring the performance of MSP Motor oil for 5 years now with outstanding results. With MSP Motor oil I can overhaul the engine every 350 to 750 runs, instead of every 75 runs.

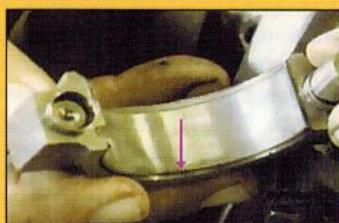
The following are some of the engine parts of a dragster taken apart after 350 runs with MSP Motor oil.



The piston on the left was taken out of a Dragster engine after 70 runs without MSP Motor Oil. The piston skirt has a severe scuffing (yellow arrow). The piston on the right was taken out of an engine after 350 runs with MSP Motor Oil 15W-40. The piston has no signs of wear, it is totally clean, and all the friction surfaces are polished.



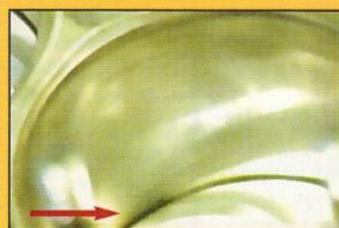
A close-up of an upper end of a piston after 350 runs with MSP Motor Oil. Since in Dragsters it is prohibited to use any fuel conditioners, only MSP Motor Oil was used. As you can see, there is carbon deposit above the upper ring, but none under it and lower. The ring surfaces are polished and clean. The cylinder skirt is totally clean.



One half of a Connecting-Rod Bearing. The friction surface is polished and has no signs of wear. In all the bearings, after 350 runs, you can still find traces of the original brake-in coating (purple arrow).



Crankshaft, Piston-Rod Bearing Journal (purple arrow). After 350 runs the surface is mirror-polished and has no signs of wear.



A close-up of a liner wall of one of the cylinders (red arrow). After 350 runs, totally clean and polished. No signs of wear (scoring or scuffing). In all the cylinders you can find traces of cross honing pattern of the original bore, indicating that virtually no wear took place.

# MSP EP-2 Grease

## Today's Most Technologically Advanced Grease



### GENERAL:

MSP Ultra Performance EP-2 Lithium Complex Grease is a superior quality, multi purpose, wide temperature-range lubricant. It is made with lithium complex soap, quality base oils and MSP's scientifically engineered anti-wear friction reducing formula with other additives to contribute to its outstanding qualities of water resistance and anti rust / corrosion protection. It may also be used in electric motors of NEMA insulation class A and B types.

### DESCRIPTION:

MSP EP-2 Grease is usable over wide range of temperatures and it does not soften excessively during high speed operation in rolling contact bearings. It also forms a good seal, which minimizes bearing contamination.

MSP EP-2 Grease, because of its outstanding properties, is a truly superior performing, multipurpose grease. Its track record indicates that its use reduces equipment maintenance frequency and equipment downtime 4 to 7 times. In addition it eliminates up to 95% wear of bearings and other parts hence economies of considerably longer equipment life and considerable reduction in maintenance costs are provided in nonextreme and extreme operating conditions. It also reduces energy consumption.

**MSP EP-2 Grease protects equipment temporarily in the event of loss of Grease or failure of the pumping system**

### GENERAL APPLICATIONS

**Curve Lubrication.** Lubrication of contact areas between wheel flanges of locomotives and railroad cars and railroad tracks using automatic rail curve lubricators.

**Excellent lubricant for:** - slides - guides - ways - chains - screws - cams - racks - pinion sets in sawmills - plywood presses and chain tracks.

**Automotive and industrial equipment operating under severe service and a wide range of operating temperatures as:** mining equipment - construction equipment - material handling equipment - marine deck equipment - marine deck cranes - oil fields equipment

### APPLICATIONS (continues)

- rock quarry equipment (jaw crushers)
- truck fleets - track roller bearings on all "tracked" type tractors like Caterpillar and Navistar.
- rotary drill collar threads and drill pipe threads.
- fifth wheels, king pins, wheel bearings, steering system bearings, and all chassis points including ball joints and universal joints, journal bearings and low and moderate speed antifriction bearings in construction equipment such as bulldozers, scrapers, loaders and shovels.
- roller chains, trunions, gears, cables, sheaves, slides, chassis bearings - conveyor bearings, sliding and rubbing surfaces, kiln car bearings, heavily loaded pivot pins, splined shafts, or other surfaces subjected to sliding, vibration, or oscillation where fretting is encountered.

### More specific applications include lubrication of:

- steering drag links - transmission cross shaftspring pins
- shackle pins - brake cam shafts - fifth wheel faceplates and pivots operating under wide range of temperatures.
- water pumps operating in water, mud or dusty conditions.
- As a life-pack lubricant of automotive generators, alternators, and starters to protect against the effects of moisture and road splash - Bearings on air-conditioning units in buildings - unsealed electric motor bearings operating under moist conditions - applications where silent operations are called for - antifriction bearings operating at high speeds.

### USER REFERENCE



*General Manager of a Quarry for production of construction stones and materials.*

"We have been using MSP EP-2 Grease for 7 years now and I cannot say enough about its outstanding performance. Before MSP was introduced to us we had to "Grease" our heavy duty equipment once a week, now with MSP EP-2 Grease we have to do it every 4 weeks, in

addition to dramatic reduction in breakdowns (which were caused by harsh conditions of heat, moisture and abrasive dust). 4 times longer maintenance intervals and considerable reduction in breakdown and repairs combined to about 1.5 million dollars reduction in annual maintenance cost. This is not taking into consideration the extended life of the equipment. I would recommend MSP Grease to anyone. ..."



"These Jaw-Crushers contain two very large, heavy duty bearings that we had to replace every 6 months, The cost of replacing them is \$7,000 each. Now we replace them every three years on the average, which translates to tens of thousands of dollars in savings. This is only one example out of many where MSP Grease made a big difference. We use MSP Grease throughout the quarry with too many success stories to recount here."



## MSP Ultra Performance

PENETRATING LUBRICANT (PL) contains MSP MTC and is scientifically blended to be the most effective whenever rust corrosion or drag is a factor. MSP PL not only penetrates through extreme rust and corrosion, it also treats the metal surface to reduce friction and eliminate wear. Use of this product provides for long lasting, smooth operation of any metal mechanism. The number of applications and benefit range far exceeds those of any other known product (MSP PL is 20 times longer lasting and more effective than WD-40).

It can be used for simplest home needs to the most severe industrial application. MSP PL is highly recommended for general machine shop work like drilling and tapping.

- Fast penetration - Breaks down rust and corrosion - Speeds up drilling and tapping

- Cutting edges of cutting tools stay sharp considerably longer, and the surface finish is much smoother and cleaner

- Reduces power consumption when used as lubricant - Reduces noise and temperature - Eliminates wear - Lubricates and protects as it penetrates - Cleans and retards electrical corrosion - Allows much Longer Maintenance intervals than other leading penetrating lubricants

(20 times longer lasting than WD-40)

Very effective moisture repellent

## GENERAL APPLICATIONS

- Sliding doors and windows - Hinges and locks - Valves and Chains - Bolts and screws - Screw jacks - Bicycles and motorcycles - Electric terminals - Drill bits and taps - Electric and air tools - Hunting and fishing equipment - Battery electrical poles - Valves and Facets - slides / guides / ways - screws - cams - racks - pinion sets - moving parts of conveyors and electrical motors.

**ANY APPLICATIONS WHERE WD-40 IS USED (MSP PL is at least 20 times longer lasting and more effective than WD-40)**

Very effective at machining ferrous and non ferrous metals resulting in the following benefits:

Much lower tool wear, much smoother surface finish, prevents welding (metal sticking to cutting tools)

## Today's most technologically advanced Penetrating Lubricant

### USER REFERENCE #1

Application: MSP Penetrating Lubricant in plant machinery (*Orimpers 6 WB and others*)

User: Automotive Division / ALCOA FUJIKURA LTD.  
(production facility in San Antonio, Texas.)

(Reference letter written by the Maintenance Manager)

"My responsibility here at Alcoa Fuji-Kura, is to primarily make sure all our equipment is operating efficiently. Our main client is Ford Motor Company and we cannot afford costly down time.

Toyojamco makes a machine called Orimper 6 WB which we use in our plants. Our maintenance personnel usually treated some parts of the production machines with WD-40 after about one week's worth of operation. We used MSP Penetrating Lubricant and the results were incredible. Lubrication was done after 4 weeks. We were impressed that MSP Penetrating Lubricant did not break down for such a long time, causing much less production down time. We also used MSP EP-2 Grease throughout the plant with too many success stories to recount here.

Maintenance Manager,  
Alcoa-Fuji-Kura

### USER REFERENCE #2

Application: Machine Shop - machining of aluminum and steel alloys.

User: Machine Shop in Florida State.

(Reference letter written by the company's Vice President)

#### a. Swiss Precision Parts.

Operation - Special Grooving O.D., Material - 52100 Die Tool Steel, Coolant - Oil  
Requirements - Must hold Tolerance of 0.0002 in on diameter and 64 microns in on Finish. Customer usually maintained these parameters for 1 shift - 8 hours - 2200 pcs. After applying a few drops of MSP Penetrating Lubricant on the cutting edge of the Carbide tip, we cut metal and held all parameters for 2.5 shifts - 20 hours - 7800 pcs +.

#### b. Aluminum Brake Piston Parts.

Material - Cast Aluminum. Operation - Drilling. Tool Used - # 64 Drill, Tin coated. With coolant, customer normally ran 2800 to 3600 holes before drill would dull. After spraying drill with MSP Penetrating Lubricant, 8600 holes were drilled without using coolant. Now MSP Penetrating Lubricant is used on all drilling, tapping and turning.

#### c. Aluminum Rails for Packing Conveyor.

Operation - Side Milling. Part - 86" long. Problem - excessive buildup on tool. Operator would have to stop every 12" to 18" to "knock off" or remove material that had welded or galled to the cutting tool. After spraying MSP Penetrating Lubricant on end mill, he machined 4 pcs (total of 344 inches) with minimal buildup and also a 30% increase in production.

### USER REFERENCE #3

Application: MSP Penetrating Lubricant on yachts

User: Yachts Renting Company in Florida

Reference letter written by the Maintenance Manager of the company



"These are some of the expensive yachts that we rent out. Any downtime due to maintenance results in considerable revenue loss. As you well know, moisture and salt water are tough on all sorts of equipment used in and on a yacht. When we started spraying various equipment parts with MSP Penetrating Lubricant, our maintenance cost went drastically down. We would recommend the use of MSP Penetrating Lubricant to anyone.

# MSP HISTORY

In Siberia, Russia – Siberia has an average temperature of -40 Degrees Celsius. This causes cold start problems for military vehicles such as tanks. At such extreme temperature, the engine oil freezes up into starch-like consistency.

After treatment with MSP, these vehicles are able to start even without a single drop of engine oil being pumped through the system. When the engine has been sufficiently heated, the engine oil will then be able to flow to the engine.

The scientists who invented MSP went to the United States in 1990 to further improve on the MSP formula. Now MSP is sold to the Military Services of Russia, America, Israel and Yugoslav. MSP was commercially available from 1994, starting in USA, Canada, Australia and New Zealand.

In 2003 MSP GLOBAL PTE LTD was formed in Singapore by the manufacturer and his 3 partners as Marketing Head Quarter to market MSP.

## WHY MSP (MOLECULAR SCIENCE PRODUCTS)?

- Eliminates up to 95% of engine/equipment wear.
- Reduces operating temperatures and noise level.
- Eliminates any deposit build-up, keeping engines and equipment completely clean.
- Maintains optimum performance even in severe operating conditions of dust, dirt and moisture.
- Reduces maintenance costs by up to 65%.

## Additional advantages for passenger cars, light / heavy duty trucks, boats, yachts and heavy duty marine vessels...

- Restores compression in cars.
- Protects engine for a long distance, under any driving conditions, should oil or coolant loss occur.
- Contributes to much cleaner emission gases.
- Extends oil change intervals and oil filters' lifespan by 4 to 7 times.
- Lowers fuel and oil consumption.
- Gives same outstanding performance in transmissions, power-steering, differentials, etc.

## Additional advantages for industrial and commercial applications...

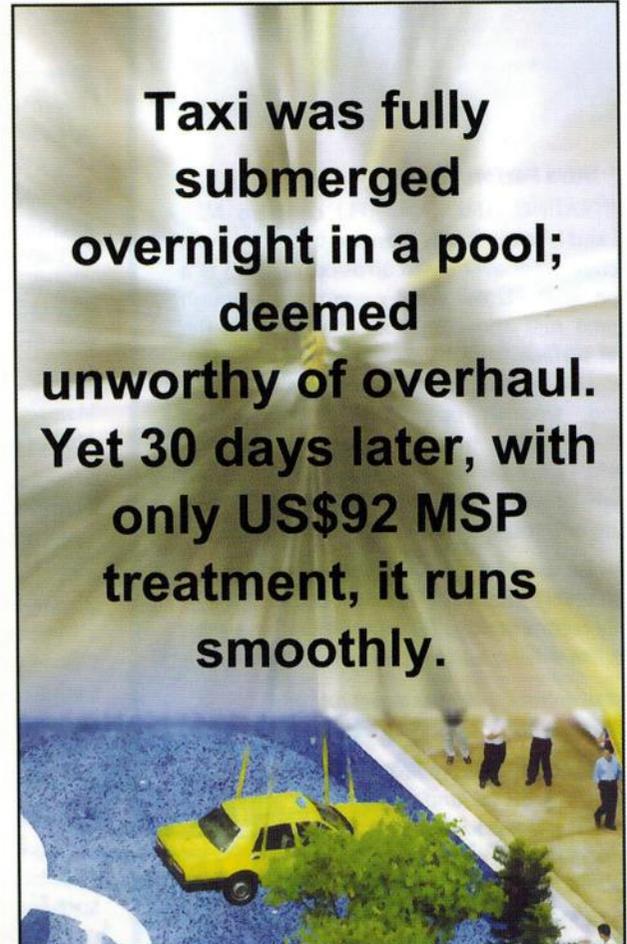
- Protects equipment for a considerable time, under any working condition, in the event of lubricant loss.
- Extends maintenance intervals by 4 to 7 times.
- Lowers energy and lubricants consumption.
- Protects equipment over wider temperature range.

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**MOLECULAR SCIENCE PRODUCTS**

WHEN YOU NEED TO BE SURE

