

SynMax
DLA / PolyX
Data Performance
Presentation

AEROMOTIVE RESEARCH

EIGER LAB FACILITY 605 FULTON AVE ROCKFORD, IL 61103

(815) 637-1574 - AEROMOTIVEGROUP@YAHOO.COM

WWW.AEROMOTIVEGROUP.COM

AEROMOTIVE RESEARCH

***Aeromotive Research and Development Group's
Chemical & mechanical engineering partners is becoming one the
national leaders in the discovery , testing and application research
regarding Aerospace Nano -Technology & Products for use within
premium automotive & commercial performance lubricants***

***This presentation is specifically designed to provide direction regarding
DLA / Poly X aerospace nano-technology . Working through the
lubrication called "tribology" or the science for
selected premium additives working together in harmony with
specific bases oils and metals surfaces. for optimum performance***



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Aeromotive Research Discovery:

Aerospace Advantages provide:

Horsepower & Torque average increase of 1.% - 2.%

Reduce “coating” Costs through DLA implementation

Component Service & Cycle Life Increased

Improved Performance Consistency

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Elements of Aerospace Advantage:

Diamond Like Additives (DLA) with Poly X

DLA is an exclusive nano-technology (combination of diamond like elements) when used in the proprietary formulated synergistic combination - historically decreases co-efficient of friction to less than .2 while increasing component durability.

DLA with PolyX through its nano technology (sub-micron size) has the ability with polarization to work itself into the smallest micron metal pores & sprawls becoming a part of the metal surface.

DLA has separate functions while working together:

- 1. Initial Cold Start, Oxidation & Thermal Protection**
- 2. Strengthen Metal Surface with Micro Diamond elements**
- 3. Friction Reducing nano-properties for both Steel & Aluminum**

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Elements of Aerospace Advantage:

Aerospace Anti-wear

**Synthetic Zinc package works with standard ZDDP performing to temperatures above 1000F (increased from 350F) keeping combustion chamber areas clean (reduced carbon deposits).
Providing improved combustion performance efficiency**

Competition ONLY racing products are designed with the correct amount of protection for SOLID flat tappet & roller lifter needs.

Aerospace Base Oils & PolyX

Ultimate viscosity & base oil stability especially under extreme conditions with long life durability performance as compared to regular synthetics & PAO alone.

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Following is a long term performance dyno test providing simulated 500 Racing Miles endurance conditions to further show SOLID flat tappet durability:

Engine was a NASCAR cup type motor

#1 “recommended” NASCAR oil product was a (JGR type design) nationally known 5W20 synthetic racing motor with MoS2 (moly) and 1500 ppm ZDDP /Zinc

#2 SynMax Racing 5W20 Competition formulated product with DLA, PolyX and Aerospace / PAO base oils.

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*Solid Lifter Metal Surface Fretting vs. SynMax DLA / Poly-X Protection
(without any exotic coatings)*

Lifters



NASCAR
Recommended
Motor Oil



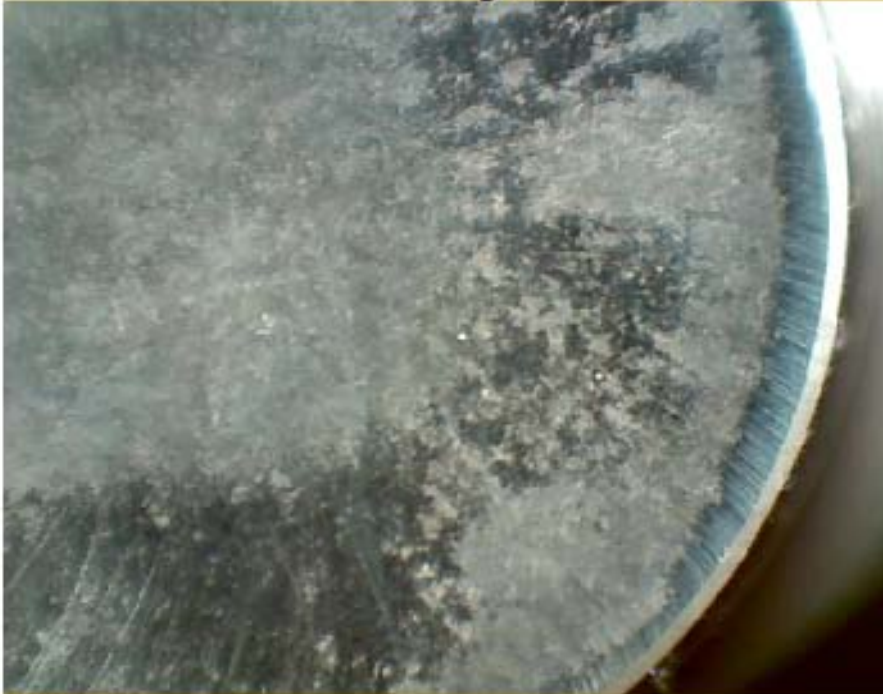
NASCAR
Recommended
Motor Oil /PolyX



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*Solid Lifter Metal Surface Fretting vs. SynMax DLA / Poly-X Protection
(without any exotic coatings)*

Lifters (50X Magnification)



NASCAR
Recommended
Motor Oil

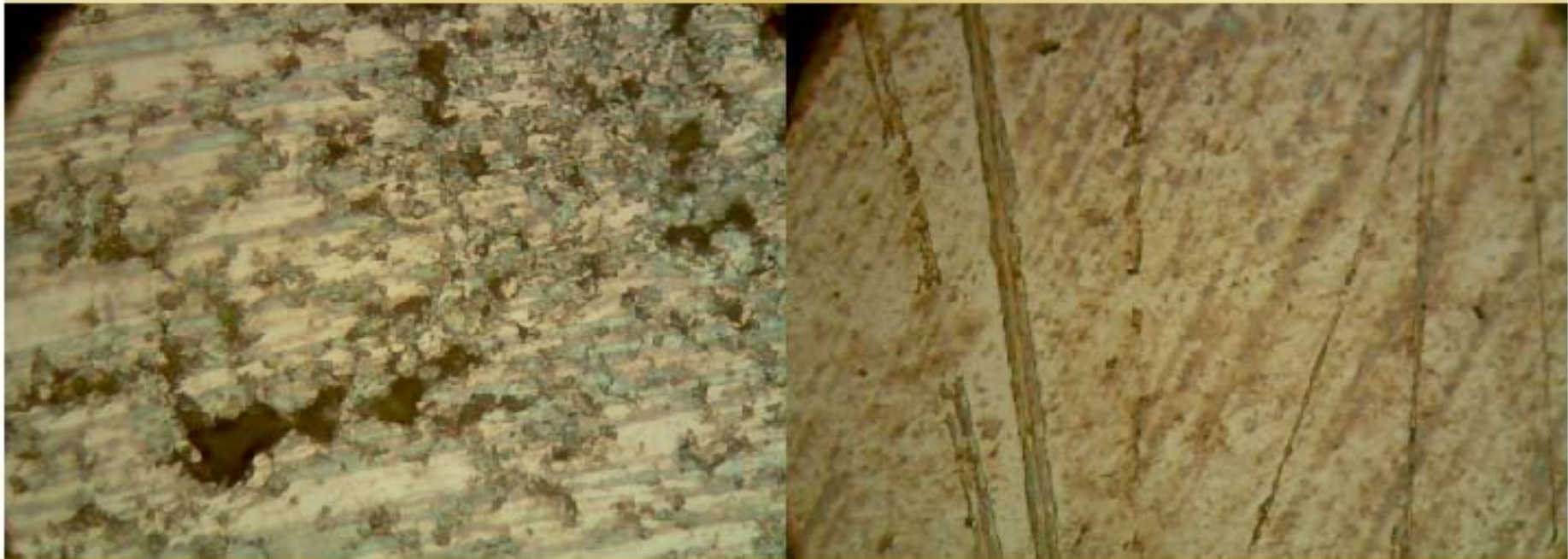
NASCAR
Recommended
Motor Oil /PolyX



AEROMOTIVE RESEARCH

*Solid Lifter Metal Surface Fretting vs. SynMax DLA / Poly-X Protection
(without any exotic coatings)*

Lifters (500X Magnification)

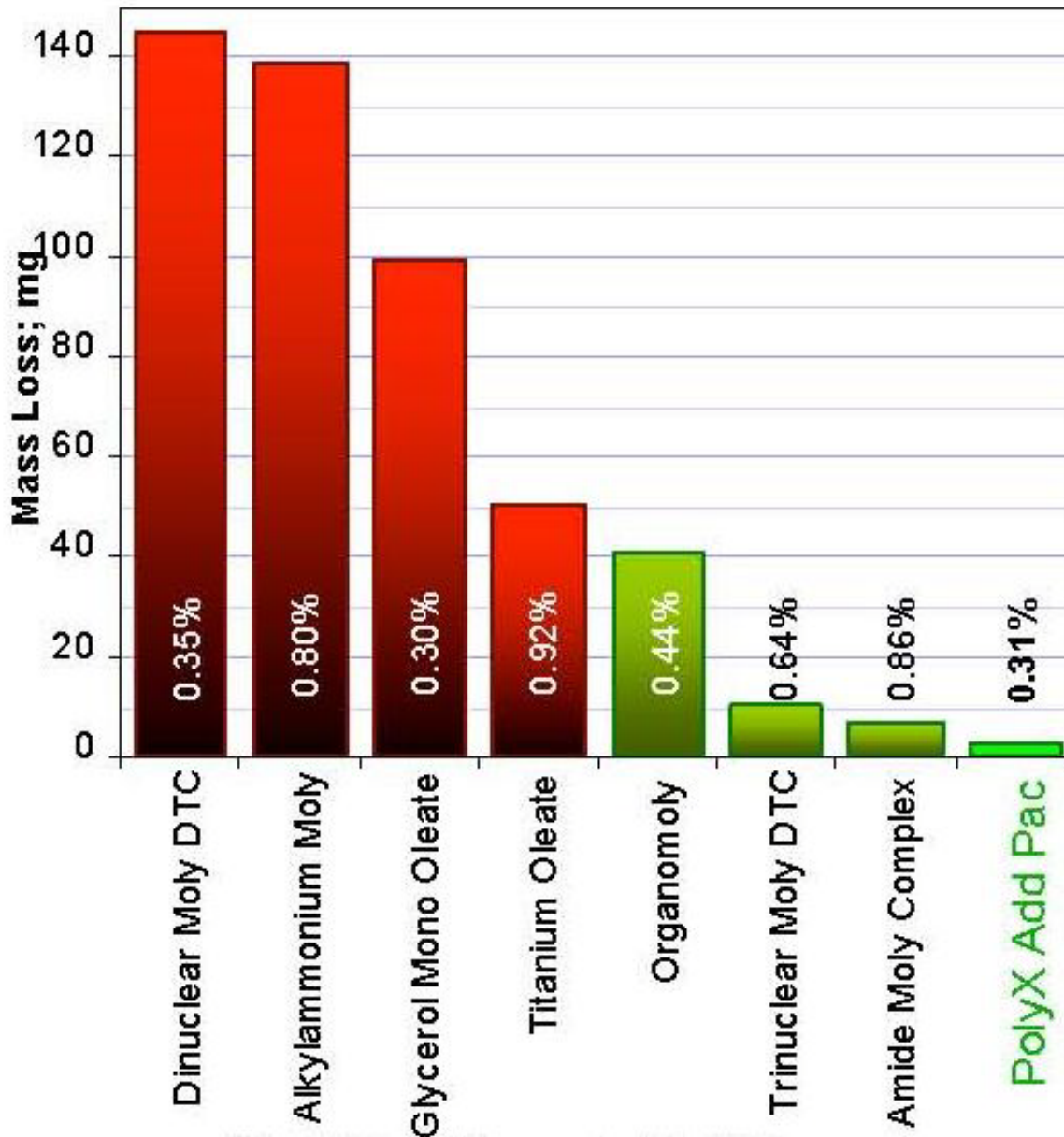


NASCAR
Recommended
Motor Oil

NASCAR
Recommended
Motor Oil /PolyX



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Falex Pin & Vee Block Test
500 lb Load; 1 hr.

Testing Demonstrates
anti-wear protection

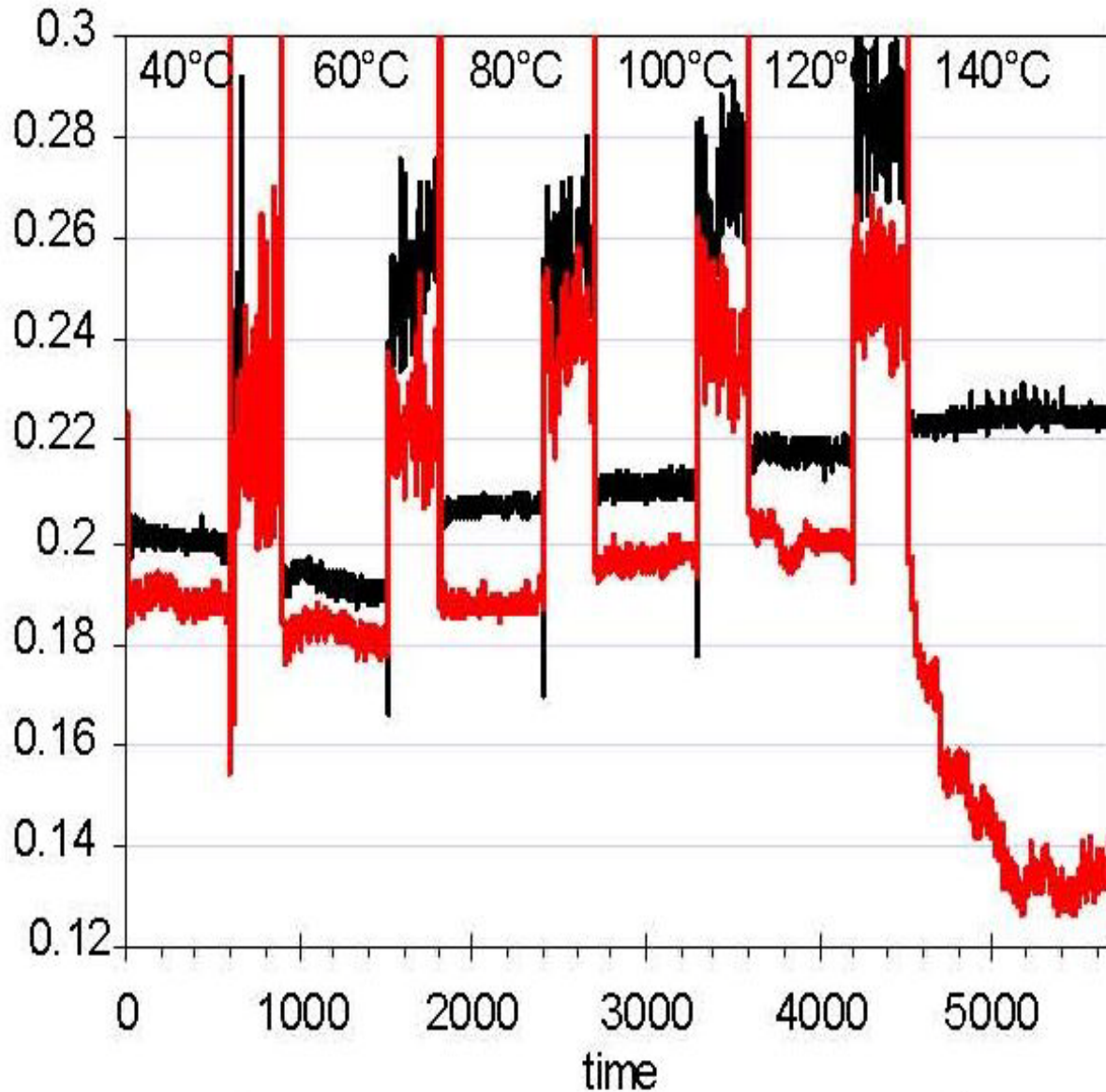
SynMax/ PolyX mass loss:
was only mg .05

as compared to

Organomoly or
Titanium Oleate (JGR)
mass loss: mg. 40

SynMax / PolyX provides 58%+
more protection with
less additive package used

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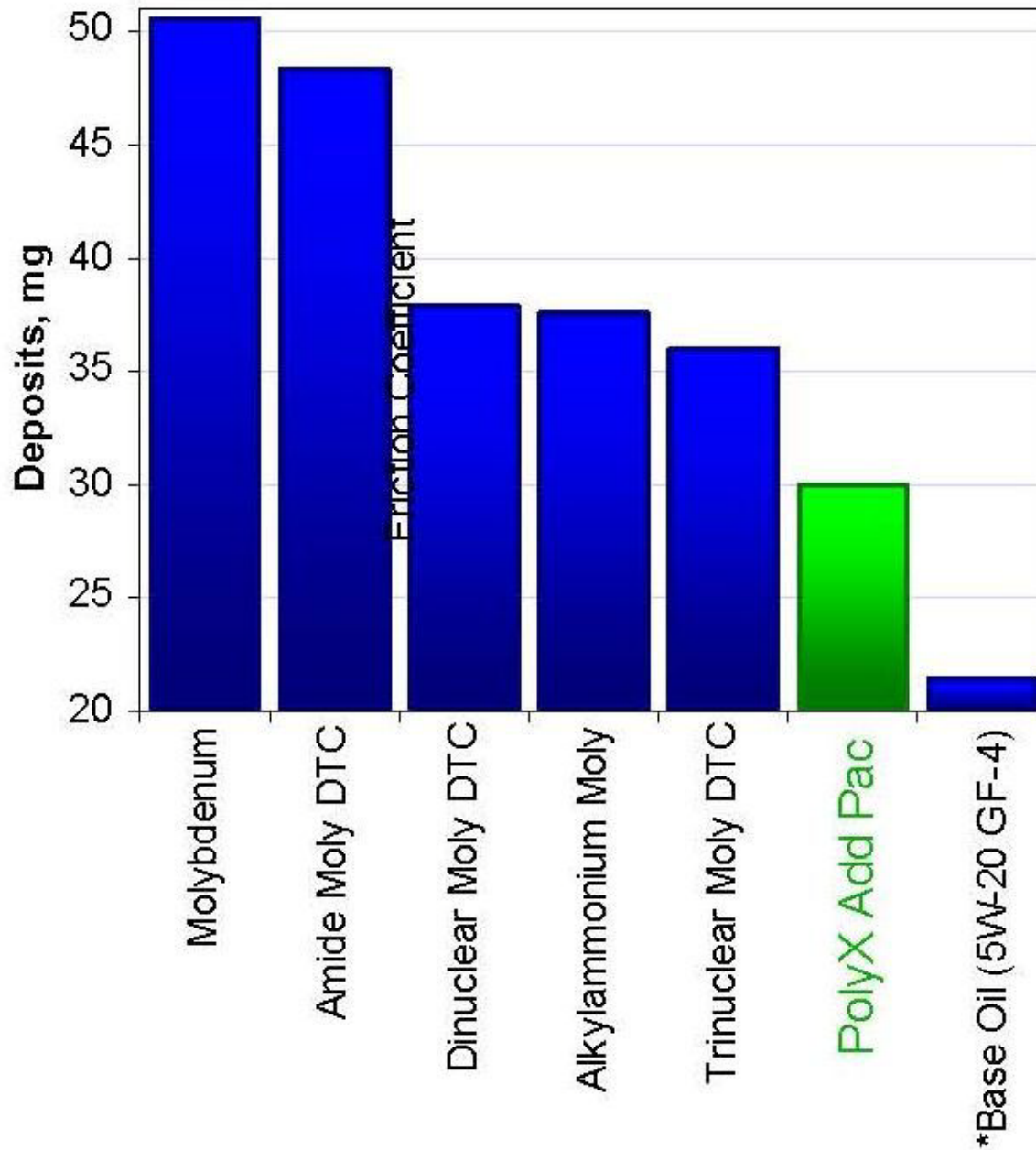
— Base — PolyX Add Pac

(SRV Friction Test)

*Ball on disk 4N; 20Hz;
10 Min @ C
followed by 5 min Hold
(bottom figure is seconds)*

*SynMax / PolyX activates
at elevated temp. & use,
time & soak cycles
4500 seconds or (1 hour)
to complete process
(=.14 co-efficient)*

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ASTM D 63335: TEOST 33C
(combustion chamber deposit
additive package test)

SynMax/ PolyX resists deposit
formation more effectively than
Moly – MoS₂ when exposed to
high temperatures (45% -)

Molybdenum . 50 mg deposit
vs.

SynMax/ PolyX .30 mg deposit

5W20 motor oil (no add pac)
package .23 mg deposit

This translates to cleaner and
more efficient combustion
chamber operations

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PERFORMANCE IMPROVEMENTS

**These tests are basic data which confirms both reduction of coefficient of friction (less than .2) WITHOUT exotic coatings
*and***

**Real life competition performance anti-wear results
with a flat tappet valve train
(NASCAR CUP type engine design)**

**Historically the Aerospace Advantages used
within the SynMax product (DLA & PolyX)**

Provided a base minimum of .5% HP TRQ increase

Average 1.% to High 2.% HP / TRQ increase.

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UPPER CYLINDER AREA & CYLINDER WALL LUBRICATION PERFORMANCE IMPROVEMENT:

Aerospace DLA nano-technology stays suspended within the synthetic base oils & flows through up into the piston area & through the piston rings (even at the highest operation temperatures)

Aerospace DLA nano-technology becomes one with the metal surface – (longer the use the better) this co-efficient friction reduction greatly helps compression consistency & slide performance of:

Piston ring to piston, piston ring to wall, wrist pin areas, piston skirt against cylinder wall etc. which also assists current piston coatings to work better.

COST SAVINGS IMPROVEMENTS:

1. Component (re-useable)

Performance Life Cycles Increased

**(crank shaft, cam shaft, block, heads, valve train
oil dry sump gears, power steering pump etc.)**

2. Thermal stability increases molecular metal life

3. Reduced exotic coatings required (as determined)

**Note: When life cycles are increased by 1 or 2 more
uses that provides thousands in cost savings**

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Coolant System Performance Discovery **Aerospace Heat Transfer Advantage:**



SynMax Water Cooler FACTS:

**Double concentrated product that
Historically lowers temperatures from
210F to 190F**

Increases Heat Transfer Performance 20%

**Premium chemical technology protects entire coolant
system from corrosion and oxidation
with heat transfer performance**

**Helps cylinder head &
cylinder wall thermal consistency**

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Aerospace Advantage

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END

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