PRODUCT INFORMATION SHEET

WYNN'S SUPREME AUTOMATIC TRANSMISSION TREATMENT

Product Number: 64511 24 x 350 ml

WYNN'S SUPREME AUTOMATIC TRANSMISSION TREATMENT has been designed to stop and prevent seal leaks in automatic transmissions, and to condition automatic transmission fluids to prevent and correct deposit-caused automatic transmission problems.

Advantages

Wynn's Supreme Automatic Transmission Treatment has been formulated to help:-

- Stop and prevent leaks due to drying or shrinking seals.
- Maintain automatic transmission performance in service.
- Fight automatic transmission fluid breakdown due to heat and oxidation.
- Revitalise seals and O-rings to maintain internal pressure.
- Prevent oxidation and extend fluid life.
- Smooth transmission operation.
- Keep transmission clean.
- Stop and prevent rough shifting.

Background

An automatic transmission transfers the output torque of an engine to the axle assembly where it is directed to the drive wheels. The transmission is connected to the axle through the torque converter clutch. The lock-up torque converter dramatically reduces fuel economy losses due to pump/turbine inefficiencies. While extremely effective at high speeds, the lock-up clutch provides no benefit under city driving conditions.

The need for improvement in this operating range led to the development of the continuously slipping torque converter clutch (CSTC). In this type of transmission particular application of the friction plates begins at speeds as low as 24 kph. Most schemes then apply pressure as required to maintain a constant differential speed between the pump and turbine. This minimises slippage losses while maintaining acceptable driveability. Fuel consumption reductions of as much as 10% have been reported.

Wynn's Australia Pty Ltd, 100 Hassall Street, Wetherill Park NSW 2164
Tel: (02) 9828 0900 Fax: (02) 9725 4698
Email wynnsaus@wynns.net Website www.wynns.net
ABN 73 000 370 150

The ever increasing use of Electronically Controlled Concerter Clutches (ECCC) is primarily attributed to the fuel economy benefits which these transmissions offer the driver. Most late model domestic and import vehicles utilise some form of this technology. For example, GM vehicles began this transition in 1996 and were mostly converted in 1997. Since 1998 all GM vehicles produced domestically utilise the ECCC technology.

Clearly the Automatic Transmission Fluid (ATF) plays a major role in maintaining adequate performance of the ECCC system. Other factors which are of importance in the ATF's for the late model automatic transmissions are:

i) Maintenance of the sprag clutch (anti-wear properties).
ii) Increasing importance of seal compatibility.
iii) The low temperature performance of the ATF's.
iv) The tolerance of the ATF for higher temperatures. With the introduction of smaller transmission sump capacity, aerodynamic styling of vehicles, and more energy from slipping torque converter clutches, the amount of heat which is transferred to the fluid increases. Therefore the ATF is required to be more thermally stable.

Wynn's Supreme Automatic Transmission Treatment is formulated with advanced additive technology (DEXRON® III"+") which provides excellent detergency, seal swell and thermal stability and hence protection for the automatic transmission.

The Advanced ATF Technology Chemistry of Wynn's Supreme Automatic Transmission Treatment.

- Revitalises seals and O-rings.
- Helps stop and prevent seal leaks.
- Extends transmission fluid life.
- Provides excellent thermal stability.
- Supplements anti-wear protection.
- Ensures transmission cleanliness.

The compatibility and stability of Wynn's Supreme Automatic Transmission Treatment with ATF's available in the market have been tested.

The ATF's used in the test matrix were:

i) MERCON® V
ii) ATF Type F
iii) ATF Type FA
iv) DEXTRON® III/MERCON®
v) Chrysler ATF 7176D
vi) Toyota Type TII
vii) Honda Genuine ATF

It was noted that Wynn's Supreme Automatic Transmission Treatment:-

- Does not alter the colour or density of the ATF's.
- Is completely miscible and compatible with all types of ATF's.
- Has minimal impact on the viscometrics of the ATF's.
- Does not affect the low temperature fluidity of the ATF's negatively.
- Does not drastically alter the chemical composition of the ATF's.
- Prevents foam formation.

Benefits

Wynn's Supreme Automatic Transmission Treatment is formulated to provide the following benefits listed under each basic chemical ingredient.

SEAL CONDITIONER

- Corrects seal leaks caused by shrunken seals.
- Does not adversely affect the elasticity properties of new transmission seals.
- Supplements the seal swell properties of drainable used fluid during a fluid change.
- Maintains new seal pliability over a longer interval.
- Compatible with factory approved automatic transmission fluids.

DETERGENTS/DISPERSANTS

- Maintains automatic transmission cleanliness, thereby helping to assure transmission life and performance.
- Removes existing deposits, thus helping to restore proper automatic transmission operation.
- Supplements the detergent/dispersant properties of undrainable used fluid during the fluid change.
- Helps assure proper transmission lubrication by removing and preventing the accumulation of deposits.

OXIDATION INHIBITORS

- Retards automatic transmission fluid oxidation and the resultant formation of deposits which can impede proper transmission operation.
- Provides additional protection to automatic transmissions operating under high temperature conditions, such as trailer towing.

- Increases the life of automatic transmission fluids.
- Supplements the oxidation inhibitor properties of undrainable used fluid during a fluid change.

CORROSION INHIBITORS

- Protects internal automatic transmission surfaces against rust and corrosion problems, caused by condensation and oxidation by-products.
- Supplements the corrosion inhibitor properties of undrainable fluid during a fluid change.

ANTIWEAR ADDITIVES

- Prevents automatic transmission wear between opposing metal surfaces without adversely affecting transmission shift points.
- Supplements the anti-wear properties of undrainable used fluid during a fluid change.

Application

Wynn's Supreme Automatic Transmission Treatment is compatible with all automatic transmission fluids. For automatic transmissions, add contents of 350 ml bottle to automatic transmission. Do not overfill. Recommended for use at 5% by volume.

Typical Characteristics

Appearance	Clear Thin Liquid
Colour (Visual)	Light Amber
Colour (ASTM D 1500)	1.5
Viscosity @ 40^{o}C (cSt)	34.8 (ASTM D 445)
Viscosity @ 100^{o}C (cSt)	7.28 (ASTM D 445)
Viscosity Index	181 (ASTM D 2270)
Density @ 15^{o}C	0.876 (ASTM D 4052)
Flash Point (^{o}C) PMCC	124 (ASTM D 93)

Seal-Swell Improvement Tests

The addition of the properly formulated package of Wynn's Supreme Automatic Transmission Treatment will enhance the seal-swell properties of both new and used transmission fluids.

For an automatic transmission fluid to become qualified originally, it must provide some minimal level of seal-swell. This is achieved typically by adding sufficient seal-swell additive to ensure a controlled amount of seal-swell. With too little swell, the seals might permit leakage and loss of the fluid.

As the automatic transmission fluid becomes oxidised in use, it tends to increase in its seal swelling characteristics, but not fast enough to keep pace with changes in the seals themselves. The seal materials, of course, also oxidise and age with heat. They tend to become hard and brittle. It has been found, over the several decades of automatic transmission cars, that supplemental seal-swell additions can keep the seals soft and pliable.

In cases where seals just begin to leak through aging, the added seal-swell can effectively soften them to stop the fluid loss. However, if the seals are allowed to wear excessively or crack, the only effective correction is replacement of the seals.

To demonstrate the relative effects on seal-swell when adding a concentrate package to new and used automatic transmission fluids, the conventional seal-swell tests for both Ford and GM specifications were used.

In principle the seal test consists of immersing approximately a three square inch specimen of the prescribed Buna N seal material in about 100 millilitres of the fluid. For GM DEXRON II, the bath is heated to 150°C and held 70 hours. For Ford MSC33F, the bath is heated to 150°C and held for 168 hours. At the end of each soak, the seal specimens are measured for percent increase in volume and changes in hardness are measured by the durometer instrument.

The following results show the effects of adding the recommended amount of Wynn's Supreme Automatic Transmission Treatment to both new and used DEXRON II type fluids. Limits for the specification apply to new oil only and are shown at the bottom of the table. Note that adding the treatment to the new oil increases the seal-swell and softens the seals, (higher negative numbers are related to increasing softness). The values for both properties still remain within the new oil limits. The effect of the treatment on used DEXRON II ATF is also shown.

Note that the used oil alone gives greater seal-swell as it becomes oxidized. As would be expected, adding a supplemental amount of seal-swell further increases the swell and softens the seal material. Both effects are beneficial as the seals wear and age with time.

EFFECT OF SUPPLEMENTAL TREATMENT ON GENERAL MOTORS AUTOMATIC TRANSMISSION SEALS

(DEXRON II, Seal Test with Buna N Rubber)

	% Volume Increase	**Hardness Change Durometer, points**
New DEXRON II*	+2.55	0
New DEXRON II plus Wynn's Supreme Automatic Transmission Treatment	+4.38	-7
Used DEXRON II	+2.78	0
Used DEXRON II plus Wynn's Supreme Automatic Transmission Treatment	+4.02	-3

*DEXRON II specification limits for new oil only using standard test specimens are:

% Volume Increase	+1 to +5
Durometer Change, points	0 to -5

The following results help complete the picture wherein the supplemental treatment is added to both new and used Ford ATF. In both cases the treatment increases the seal-swell. All values remain within the new oil specification, although there is no limit specified for used oil.

EFFECT OF SUPPLEMENTAL TREATMENT ON FORD AUTOMATIC TRANSMISSION SEALS

(Ford M2C33F and G, Seal Test with Buna N Rubber)

	% Volume Increase	Hardness Change Durometer, points
New Ford ATF*	+3.10	-4
New Ford ATF plus Wynn's Supreme Automatic Transmission Treatment	+4.01	-5
Used Ford ATF	+3.95	-2
Used Ford ATF plus Wynn's Supreme Automatic Transmission Treatment	+4.32	-5

*Ford 33F and 33G specification limits for new oil only using standard test specimens are:

% Volume Increase	+3 to +8
Durometer Change, points	± 10

In both cases, DEXRON II and Ford ATF, the used fluids were obtained from transmission tests where the oils were moderately oxidized. This was done to represent a realistic situation in the field where the supplemental treatment might be considered a preventive maintenance procedure. Waiting until the fluid is excessively oxidized will be too late. Wear and deposits already developed cannot readily be reversed by an additive treatment.

With the latest automatic transmission fluid specifications produced by GM and Ford, the previous seal-swell tests were upgraded by the Wynn's Seal Swell Technology Test for GM DEXRON®III and Ford MERCON.

WYNN'S SEAL SWELL TECHNOLOGY TEST RESULTS
GM DEXRON®III SEAL TESTS

	SEAL COMPOUND	REQUIREMENTS	RESULTS
A.	POLYACRYLATE RUBBER:		
	VOLUME CHANGE	+5 TO +12%	+5.44
	HARDNESS CHANGE	-8 TO +1	-1
B.	NITRILE RUBBER:		
	VOLUME CHANGE	+1 TO +6%	+1.60
	HARDNESS CHANGE	-3 TO +6	+1
C.	POLYACRYLATE RUBBER:		
	VOLUME CHANGE	+2 TO +7%	+3.35
	HARDNESS CHANGE	-4 TO +4	+2
D.	FLUORELASTOMER:		
	VOLUME CHANGE	+0.5 TO +5%	+2.56
	HARDNESS CHANGE	-5 TO +6	-1
E.	SILICONE:		
	VOLUME CHANGE	+23 TO +45%	+29.43
	HARDNESS CHANGE	-30 TO -13	-18
F.	VAMAC:		
	VOLUME CHANGE	+13 TO +27%	+17.82
	HARDNESS CHANGE	-17 TO –7	-12

WYNN'S SEAL SWELL TECHNOLOGY TEST RESULTS
FORD MERCON SEAL TESTS

	SEAL COMPOUND	REQUIREMENTS	RESULTS
A.	ATRR-100:		
	VOLUME CHANGE	+1 TO +6%	+2.8
	HARDNESS CHANGE	-5 TO +5	+5
B.	ATRR-200:		
	VOLUME CHANGE	+3 TO +8%	+4.8
	HARDNESS CHANGE	-5 TO +5	+1
C.	ATRR-300:		
	VOLUME CHANGE	COMMITTEE	+24
	HARDNESS CHANGE	DECISION	-24
D.	ATRR-400:		
	VOLUME CHANGE	+1 TO +5%	+1.8
	HARDNESS CHANGE	-2 TO +5	+1
E.	ATRR-500:		
	VOLUME CHANGE	+9 TO +20%	+11.8
	HARDNESS CHANGE	-10 TO +1	-3

Elastomer Test

In order to establish the compatibility of Wynn's Supreme Automatic Transmission Treatment with seals and O-rings, an ATF test fluid containing 5% of Wynn's Supreme Automatic Transmission Treatment was subjected to the GM DEXRON®III elastomer test. The test data indicate that not only does Wynn's Supreme Automatic Transmission Treatment not damage seals, but it possesses seal swelling properties which help protect the seals and O-rings in the transmission. The results for DEXRON®III ATF and the treated materials are reported in the following table.

	DEXRON® III	**DEXRON® III + 64511**	**Limits**
COMPOUND-A			
Polyacrylate			
Volume %	+7.53	+7.49	+5 TO +12
Hardness	-2	-4	-8 TO +1
COMPOUND-B			
Nitrile			
Volume %	+4.53	-2.03	-1 TO +6
Hardness	-1	2	-3 TO +6
COMPOUND-C			
Polyacrylate			
Volume %	+4.45	+4.81	+2 TO +7
Hardness	-1	-1	-4 TO +4
COMPOUND-D			
Flourocarbon (Viton)			
Volume %	+3.98	+3.38	-0.5 TO +5
Hardness	-1	-2	-5 TO +6
COMPOUND-J			
Silicone			
Volume %	+33.04	+28.79	+23 TO +45
Hardness	-17	-18	-30 TO –13
COMPOUND-R			
Ethylene/Acrylic			
Volume %	+20.16	+19.73	+13 TO +27
Hardness	-12	-12	-17 TO -7