

501 | **AlliCat C-4/TO-4** Heavy Duty Transmission Lubricant

DESCRIPTION:

AlliCat 501 meets and exceeds the Caterpillar TO-4 Specification for transmission and drive train fluid requirements. Caterpillar states the need for TO-4 specification lubricants in current equipment for increased productivity and durability, higher bearing and gear loads, and new diverse friction materials. AlliCat 501 is a specialized fluid type that must replace all motor oils and torque fluids previously used in Caterpillar transmissions to maintain warranty protection.

AlliCat 501 also exceeds Allison C-4 transmission requirements. Allison Transmission no longer approves the use of tractor hydraulic fluids which were previously approved under the Allison C-4 specifications. AlliCat 501 should replace these fluids in all Allison transmissions.

COMPOSITION:

Primrose utilizes the only basestocks select enough to be qualified by Caterpillar and Allison. To these are added a uniquely balanced combination of additives which far exceed these heavy duty performance criteria.

USES:

AlliCat 501 is formulated in grades 10, 30, 50, and 60 depending on individual equipment requirements.

APPLICATIONS:

Allison C-4
Caterpillar TO-4



PRIMROSE PLUS

501 AlliCat C-4/TO-4 Heavy Duty Transmission Lubricant ILSAC GF-5

TYPICAL SPECIFICATIONS:

Specifications and Performance Data for Grade 30

TO-4 Tests	Results	Requirements
D445 Viscosity @100°C	10.99	9.3 – 12.5 cSt
D2983 Brookfield Vis. @-25°C	134,000	150,000 cP max.
D4684 Pumpability @ -15°C	8.900	30,000 cP max.
D4624 High Temp/High Shear @ 150°C	3.42	2.9 cP min.
D92 Flash Point, °C	257	160° min.
D92 Fire Point, °C	280	175°C min.
Mod. BT-9 Rust	Pass @ 175 hours	2 of 3 rods passing @ 175 hours
D130 Cu Strip (2hrs./100°)		1A
Fluid Compatibility	Pass	No Sediment/Precipitation
Homogeneity	Pass	No Sediment/Precipitation
D892 Foaming		
Seq. I	0/0	25/0
Seq. II	0/0	25/0
Seq. III	0/0	25/0
Seq. I w/0.1% water	0/0	25/0
Seq. II w/0.1% water	0/0	25/0
Seq. III w/0.1% water	0/0	25/0
TO-4 Fluoroelastomer Seal Test	Pass	Less than or equal to reference plus 10%
Allison C-4 Seals:		
Nitrile (Buna-N)		Batch 1291S
% Volume Change	+1.58	No Limits Assigned
Hardness Change, pts.	+6	
Dip Cycle (Polyacrylate)		Batch 191S
% Volume Change	+5.10	0.0 to +10.00
Hardness Change, pts.	-3	-5 to 0
Tip Cycle (Silicone)		Batch 191S
% Volume Change	+1.68	+1.50 to +6.50
Hardness Change, pts.	-1	-10 to 0
Fluoroelastomer (Viton)		
% Volume Change	+0.62	0.0 to +4.00
Hardness Change, pts.	+1	-4 to +4
D4998 FZG Gear Wear		
Run #1, mg	31	Average of three separate runs is less than 100 mg.
Run #2, mg	6	
Run #3, mg	38	
VICKERS PUMP	#1 #2 #3	
Vanes, mg. wt. loss	Not Required	15 mg. max. each cartridge
Ring, mg wt. loss	RA from 10W	75 mg. max. each cartridge
C-4 THOT	Pass	
TAN Increase	1.79	7.0 max.
Carbonyl Absorbance	0.61	0.9 max.
Viton seal	Pass	Pass
Sludge	Light	Light to medium sludge
VC70 FRICTION		
Sequence 1219	Pass	Pass
Sequence 1220	Pass	Pass
Sequence 1221	Pass	Pass
Sequence 1222	Pass	Pass
Sequence 1223	Pass	Pass
Sequence 1224	Pass	Pass
Sequence FRRET	Pass	Pass