

## V.I. Plus

Heavy Duty Diesel Engine Oil  
No. 405

SAE 15w/40

### DESCRIPTION:

**V.I. Plus** is a premium quality, mixed fleet, engine oil formulated for naturally aspirated and turbocharged four stroke diesel engines and four stroke gasoline engines in which the **API CI-4 Plus/SL** service category is recommended. **V.I. Plus** is compounded using the highest quality base oils and Frontier's exclusive ETX extender additive package. This exclusive severe duty formulation meets or exceeds all major engine manufacturers' performance requirements and specifications for a SAE 15w/40 engine oil in 2006 and earlier four stroke gasoline and diesel engines.

### FEATURES:

**V.I. Plus Engine Oil** with Frontier's exclusive ETX extender additive package contains:

- Severely hydrocracked base oil to provide maximum protection between metal surfaces
- High Total Base Number (TBN) to neutralize acids created during combustion from Sulphur in fuel
- Unique blend of metallic and nonmetallic anti-wear additives to keep cylinders, pistons, rings, and injectors protected against abrasive wear and corrosion
- High levels of detergents to keep piston rings clean and free for optimal compression and reduced oil consumption.
- Dispersants to hold soot in suspension and carry it to the filter to minimize cylinder head sludge, and viscosity increase
- Specially selected oxidation inhibitors to prevent sludge and oil thickening during extended oil drain periods
- High Viscosity Index (VI) to ensure flow at low temperatures and proper viscosity at high temperatures

### PERFORMANCE CAPABILITIES:

Meets and exceeds the following performance requirements:

**API:** CH-4, CI-4, CI-4 PLUS

**API:** SH, SJ, SL

**MILITARY SPEC:** MIL-L-2104F, MIL-L 2104G

**MACK:** EO-L, EO-M, EO-N Premium Plus 03

**MERCEDES:** MB-Approval 228.3

**DDC SERIES:** Power Guard 93K214

**MAN:** M 271, 3275-1,

**DEUTZ:** DQC-III-10

**Mack:** EO-N Premium Plus 03

**CATERPILLAR:** ECF-a, ECF-2

**CUMMINS:** 20071, 20076, 20077, CES 20078

**ALLISON:** C-3, C-4

**GM:** 6041-M, 6049-M, 6048-M

**ACEA:** E2-96, B3-98, A3-98

**ZF:** TE-ML 04C

**MTU:** Categories 1 and 2

**VOLVO:** VDS-3

**JASCO:** DH-1

### SUMMARY:

Engine designs changed in 2007 to meet EPA emission requirements. 2007 and later engines require engine oils with reduced metallic additive packages to prevent EGR, DPF and SCR failures. In pre 2007 engines using commercial grade oils with reduced metallic additive packages creates excessive wear, carbon deposits, oxidation and oil thickening making these engines more susceptible to failure. Using V.I. Plus Engine Oil in pre 2007 engines increases engine life, reduces overall maintenance expense and saves on replacement costs.

*We recommend our **L. E. Plus #421** (Low Emission) oil for 2007 Exhaust Gas Recirculation (EGR) with Diesel Particulate Filter (DPF) and all later engines requiring API CJ-4/SM, SAE 15w/40 oils.*

**TYPICAL SPECIFICATIONS:**

<b>SAE GRADE:</b>	<b>15w/40</b>
Viscosity @ 100°C, cSt:	14.25
Viscosity @ 40°C, cSt:	103.75
<b>Viscosity Index:</b>	<b>150</b>
Gravity, ° API:	29.1
Flash Point, COC, °F:	430
Pour Point, °F:	-20
<b>TBN, ASTM D-2894:</b>	<b>14</b>
Oxidation Stability:	Exceeds Requirements
Rust and Corrosion:	Exceeds Requirements
Anti-Wear Protection:	Exceeds Requirements
D-892 Foam Test With Option A Sequence I, II, III	0/0
HT/HS, Cp D-4683	3.97

Values shown here are typical, and may vary.