

# SHELL ROTELLA CK-4 AND FA-4

DELIVERING THE NEXT GENERATION OF  
HEAVY DUTY ENGINE OILS.



**ALLIED**  
OIL & TIRE COMPANY  
[www.AlliedOil.com](http://www.AlliedOil.com)

## CATEGORY:

- 1. What is changing?** The Environmental Protection Agency (EPA), the National Highway Traffic Safety Administration (NHTSA) and major engine manufacturers have agreed on ambitious new goals for fuel economy and emissions in future medium- and heavy-duty vehicles. To meet these goals without any compromise in engine protection, a new generation of diesel engine oils is required.
- 2. What is CK-4?** CK-4 engine oils will be a direct replacement for the engine oils you're using now. You'll be able to buy the same viscosity grades and oil types (conventional, full synthetic, synthetic blend) you're using now, and they'll be "backwards compatible" to ALL current vehicles. They'll just also conform to the new API CK-4 standards.
- 3. What is FA-4?** The new FA-4 engine oils will be offered in lower viscosity grades and are designed primarily for next-generation engines to help maximize fuel economy without sacrificing engine protection. These FA-4 oils may have limited backwards compatibility<sup>2</sup> and would be labeled as such. Oil companies and OEMs are currently testing these products in a range of applications to demonstrate their performance without sacrificing engine protection.
- 4. When do these changes take place?** The American Petroleum Institute (API) will begin issuing licenses for these new categories on Dec. 1, 2016. Expect to start seeing the CK-4 and FA-4 designations in the API donut on product labels on or after Dec. 1, 2016.
- 5. What benefits can customers expect from CK-4 and FA-4?**

- a) Fuel Economy** – Fuel Economy continues to be a high priority for HDEO oils, and the competing requirements for both fuel economy and CO<sub>2</sub> reduction are two of the main drivers for the category.

The CK-4 category (formerly called PC-11A), which is backward-compatible with the CJ-4 category, emphasizes High Temperature High Shear (HTHS) protection, and as much fuel economy performance as can be provided with a formulation that has a HTHS above 3.5cP.

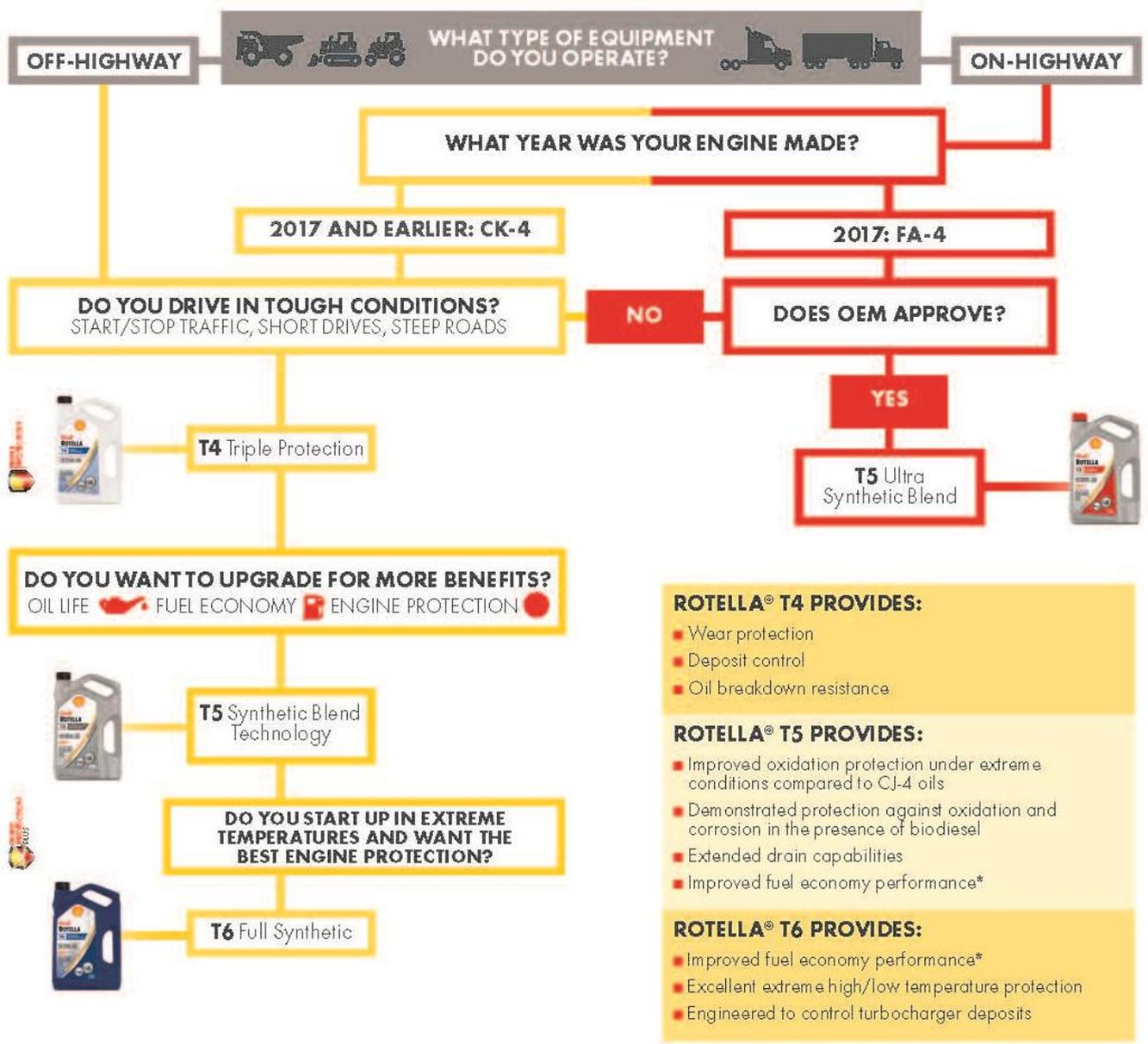
In contrast, the FA-4 category (formerly called PC-11B) emphasizes fuel economy levels above and beyond CJ-4 and CK-4 oils through the use of thinner viscosity fluids, with an emphasis on "Low Temperature High Shear" between 2.9cP and 3.2cP.).

- b) Shear Stability** – Shear stability is the ability of the oil molecules to resist shearing under severe stress inside the engine. Oil shearing results in a lower viscosity, and excessive viscosity loss could impact the ability of the oil to protect vital engine parts. The new CK-4 standards call for improvements in shear stability versus CJ-4 oils. New, more stringent shear stability test limits are being developed to validate that each CK-4 oil's shear stability meets the new guidelines.

**b) Oxidation Stability** – Oxidation is one of the primary causes of oil breakdown and is accelerated by higher operating temperatures. The next generation of engines are being designed to run hotter. So, CK-4 and FA-4 standards call for improved oxidation stability versus CJ-4 oils.

**c) Aeration Control** - Engine oils can become aerated during high-speed engine operation, meaning that small air bubbles can become entrained in the oil. These air bubbles can significantly impact an engine oil’s effectiveness. Aeration control describes an oil’s ability to release these air bubbles—and both CK-4 and FA-4 categories require oils to have better improved aeration control properties compared to CJ-4 oils.

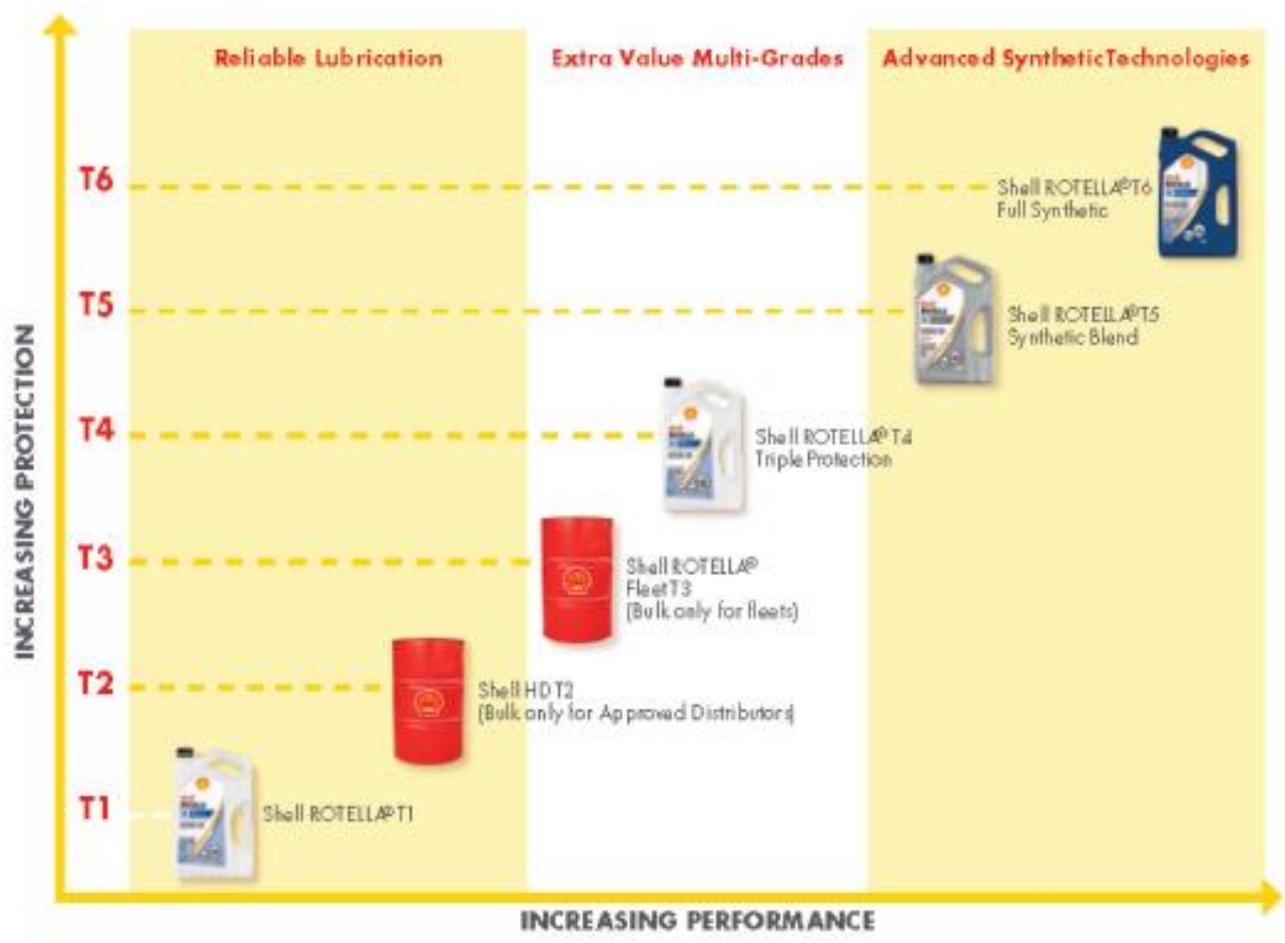
## WHICH ROTELLA® HEAVY DUTY ENGINE OIL SHOULD YOU USE?



\*Compared to conventional SAE 15W-40 engine oil.

# NEW SHELL ROTELLA PORTFOLIO:

1. **What is changing?** Meeting the new CK-4 and FA-4 specifications wasn't our real destination when we designed the Shell ROTELLA heavy duty engine oil portfolio. We wanted to create the most technically advanced Shell ROTELLA formulation ever. And we aimed to clearly organize our portfolio so you knew which oil to choose. We created six tiers of Shell ROTELLA brand heavy duty engine oils – offering better performance with each tier.



Current SKU Family	New SKU Family	Changes
Shell ROTELLA Triple Protection 15W-40 (CJ-4)	Shell ROTELLA T4 Triple Protection 15W-40 (CK-4 ready)	<ul style="list-style-type: none"> <li>• New fluid and labels for ALL bulk and pack</li> </ul>
Shell ROTELLA Triple Protection 10W-30 (CJ-4)	Shell ROTELLA T4 Triple Protection 10W-30 (CJ-4)	<ul style="list-style-type: none"> <li>• New big bottle design with new label design (bottle dimensions provided below)</li> </ul>
Shell ROTELLA T5 10W-30 Synthetic Blend (CJ-4)	<b>New</b> Shell ROTELLA T5 10W-30 Synthetic Blend (CK-4 ready)	<ul style="list-style-type: none"> <li>• New label design on quarts and other pack types to maintain family look</li> </ul>

- 2. Why were some of the products renamed?** We chose to rename Rimula Super to Shell HD T2. This is a bulk-only product that is available exclusively to Distributors. We chose to rename the product so that the Shell Rimula brand is no longer used in North America. (Shell Rimula is a premium heavy duty engine oil brand across the rest of the world, similar to Shell ROTELLA.) Shell ROTELLA T Triple Protection was renamed to Shell ROTELLA T4 Triple Protection in an effort to more clearly distinguish its place in the line-up of the portfolio as one of our highly differentiated products. Much consumer research was conducted that led to the decision. Because consumers know and love Triple Protection, we have kept it as part of the name of the new product.
- 3. When do these changes take place?** Changes begin taking place in August for phase 1 products and December for phase 2 products. Launch timing varies by product and package type as well as between US and Canada. In most cases the shift to the new SKUs will be a rolling change, meaning that dates on which individual customers/distributors begin receiving the new bottles will vary based on inventory levels at our different source points. (For full details please speak with your Shell Sales representative.)
- 4. What benefits can customers expect from the new portfolio?** The most technically advanced Rotella® formulation ever.
  - a) Enhanced protection against oxidation
  - b) Designed to effectively sustain emissions control system durability where diesel particulate filters and after-treatment systems are used.
  - c) Enhanced protection against viscosity loss due to shear.
  - d) Improved oil aeration.
- 5. What OEM specs will we have?** There are new OEM specifications being developed which will coincide with the API CK-4 and FA-4 products. We anticipate that most OEMs will be formally releasing them within the next month or so. If the OEMs delay the introduction of these new specifications past August, it could impact our ability to have the specifications listed on the bottle labels (as there is a significant lead time to get labels completed). However, our TDS and marketing materials will reflect the latest specifications. We expect that our products will meet all the new specifications once they are released.

## TECHNICAL ITEMS:

- 1. Is the color changing?** Yes, there will be a slight color change for the Shell ROTELLA T4 10W30 and Shell ROTELLA T5 Synthetic Blend 10W30.
- 2. Can the products mix?** There are no miscibility concerns when transitioning from the CJ-4 formulations and to the new CK-4 formulations. However, this transition provides an opportunity to draw down tanks, clean them and perform any necessary maintenance. Drawing down the tank prior to transition will also help ensure that the benefits of the new formulations are not diluted.

**3. Where can my customer find information about the technical changes?**

- a) Technical Data Sheets (TDS) – can be downloaded from the Electronic Product Catalog, [www.epc.shell.com](http://www.epc.shell.com)
- b) Safety Data Sheets (SDS) – can be downloaded from the Electronic Product Catalog, [www.epc.shell.com](http://www.epc.shell.com)
- c) Materials handling instructions – see the Safety Data Sheets on [www.epc.shell.com](http://www.epc.shell.com)
- d) Draw-down requirements/miscibility concerns – Technology has confirmed that there are no miscibility concerns moving from the old formulation to the new. However, this transition provides an opportunity to draw down tanks, clean them and perform any necessary maintenance. Drawing down the tank prior to transition will also help ensure that the benefits of the new formulations are not diluted.

**4. What will this do to Lube Analyst results?** – There will be some changes to the oil analysis results. Request the technical bulletin from your Account Manager (Available on the Sales & Marketing toolkit).

**5. Are there any chemical changes?** - There will be changes in the chemical signature of each product. Request a technical bulletin from your Account Manager.



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