



# Shell Caprinus HD 40

## Railroad diesel engine oil

Shell Caprinus HD 40 is a 'zinc-free' engine oil for medium-speed diesel engines.

It was developed to meet the special requirements laid down for lubricants for the diesel engines in use on American railways requiring LMOA Generation 3 lubricants.

Caprinus HD 40 is composed of high viscosity index mineral base oils, with very good oxidation resistance, and a multi-purpose additive package to provide protection against wear, corrosion, fouling and oxidation.

### DESIGNED TO MEET CHALLENGES

#### Performance, Features & Benefits

- **Good detergency & dispersancy properties**  
A carefully balanced combination of detergency and dispersancy ensures outstanding engine cleanliness.
- **Good oxidation and thermal stability**  
Good protection against corrosion by the acidic products of combustion.
- **Good anti-wear properties**  
Maintains a protective oil film between pistons and their rings and cylinder walls, even under high operating temperatures and pressures.
- **High viscosity index base oils**  
Provides a higher level of protection than lubricants based on naphthenic mineral oils.

- Mobile and stationary emergency sets
- Mobile drilling platforms
- Tugs and fishing vessels
- Where 'zinc-free' oils are recommended by the engine manufacturer

#### Specifications, Approvals & Recommendations

- ALCO Div'n of White Motor Co : ALCO Diesel Engine Approval
- API Service Class'n. - CD
- US Military Spec'n. - MIL-L-2104B
- GM-EMD - Field Evaluation Test
- General Electric - LMOA, Generation 3

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

#### Main Applications



- Railroad medium-speed diesel engines

#### Compatibility & Miscibility

- **Seal & Paint Compatibility**  
Shell Caprinus HD 40 is compatible with all seal materials and paints normally specified for use with mineral oils.

#### Typical Physical Characteristics

| Properties          |        |      | Method | Shell Caprinus HD 40 |
|---------------------|--------|------|--------|----------------------|
| SAE Viscosity Grade |        |      |        | 40                   |
| Kinematic Viscosity | @40°C  | cSt  | IP 71  | 158.0                |
| Kinematic Viscosity | @100°C | cSt  | IP 71  | 14.6                 |
| Viscosity Index     |        |      | IP 226 | 100                  |
| Density             | @15°C  | kg/l | IP 365 | 0.908                |
| Flash Point (COC)   |        |      | IP 36  | 235                  |
| Pour Point          |        |      | IP 15  | -9                   |
| TBN-E               |        |      | IP 276 | 10.0                 |
| Sulphated Ash       |        |      | IP 163 | 1.1                  |

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

## **Health, Safety & Environment**

### ■ **Health and Safety**

Shell Caprinus HD 40 is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from <http://www.epc.shell.com/>

### ■ **Protect the Environment**

Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

## **Additional Information**

### ■ **Advice**

Advice on applications not covered here may be obtained from your Shell representative.