Technical Data Sheet

Formerly Known As: **Shell Tonna S**

# Shell **Tonna** ***S3 M 220***

- Extra Machining Accuracy
- Standard Applications

***Premium machine tool slideway oils***

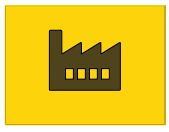
Shell Tonna S3 M oils are specially designed for the lubrication of machine tool slides, tables and feed mechanisms. Their enhanced tackiness and stick-slip characteristics are combined to offer superior frictional performance on slideways. They are specially recommended in cases where high precision and low speed machines are used as well as in combined lubrication systems.

## DESIGNED TO MEET CHALLENGES

### Performance, Features & Benefits

- **Excellent frictional properties**
  Specially developed to overcome “stick-slip” problems with slow moving machine tool slides and tables, allowing more accurate positioning. This provides benefits of improved finished surface quality and dimensional accuracy of work pieces.
- **Advanced technology**
  Developed in conjunction with machine tool manufacturers to meet the requirements of the most advanced machine tools using a wide variety of slideway materials.
- **Good slideway adhesion**
  Provides strong adhesion to slideway surfaces, resisting wash-off by metalworking fluids and those reducing oil consumption and giving more uniform working condition for the machine.
- **Ready separation from water-miscible cutting fluids**
  Separates readily from water-miscible metalworking fluids allowing easy removal by skimming.
- **Excellent anti-wear performance**
  Provides high levels of anti-wear protection for slideways and gears making the product particularly suitable for machines with combined systems.
- **Excellent corrosion prevention characteristics**
  Provides effective protection of machine tool surfaces and components in the presence of water-miscible cutting fluids.

### Main Applications



- **Machine tool slideways, tables and feed mechanisms**
  Developed for use on a wide range of materials used for machine tool slideway surfaces, including cast iron and synthetic materials.
- **Machine tool gearboxes and spindles**
  Also suitable for gear and headstock lubrication.

  The lower viscosity grades are intended for horizontal slide lubrication (Shell Tonna S3 M 32 or 68). For vertical slides use Shell Tonna S3 M 220.

### Specifications, Approvals & Recommendations

- Fives Cincinnati P-50 (IS0 220), P-47 (ISO 68)
- ISO 11158 / ISO 6743-4 HG
- ISO 12925-1 / ISO 6743-6 CKC
- ISO 19378 / ISO 6743-13 GA and GB
- CGLP Slideway Oils against DIN 51502

  For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

## Typical Physical Characteristics

| Properties | | | Method | Shell Tonna S3 M 220 |
|---|---|---|---|---|
| ISO Viscosity Grade | | | ISO 3448 | 220 |
| Kinematic Viscosity | @40°C | $mm^2/s$ | ISO 3104 | 220 |
| Kinematic Viscosity | @100°C | $mm^2/s$ | ISO 3104 | 19.1 |
| Viscosity Index | | | ISO 2909 | 98 |
| Density | @15°C | $kg/m^3$ | ISO 12185 | 894 |
| Flash Point (Cleveland Open Cup) | | °C | ISO 2592 | 250 |
| Pour Point | | °C | ISO 3016 | -15 |

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

- 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.