Shell **Tonna** ***S2*** *M*

- Extra separation from coolants
- Standard applications

DESIGNED TO MEET CHALLENGES

Every part of your machine or process has been meticulously engineered, so you want to use a lubricant that has been designed to ensure that your equipment is well protected and works efficiently.

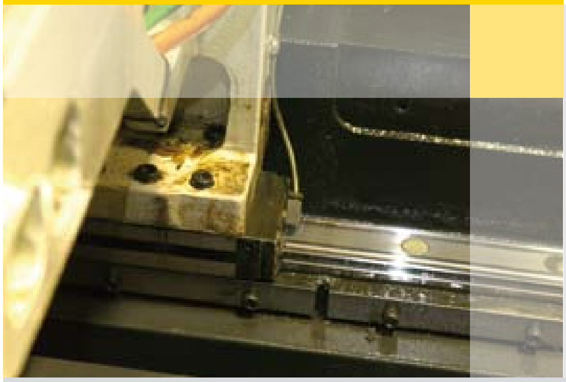
The Shell Tonna range of slideway oils has been developed to enable equipment operators to select the oil that will deliver optimum value to their operations through

- **wear and corrosion protection**
- **long oil life**
- **system efficiency.**

Performance at a glance

	Protection	Oil life	System efficiency
Shell **Tonna** ***S3*** *M* ■ Extra machining accuracy ■ Standard applications	✓✓✓✓	✓✓✓✓	✓✓✓✓✓
Shell **Tonna** ***S2*** *M* ■ Extra separation from coolants ■ Standard applications	✓✓✓	✓✓✓✓	✓✓✓✓

Performance level is a relative indication only.



A PREMIUM MACHINE TOOL SLIDEWAY OIL

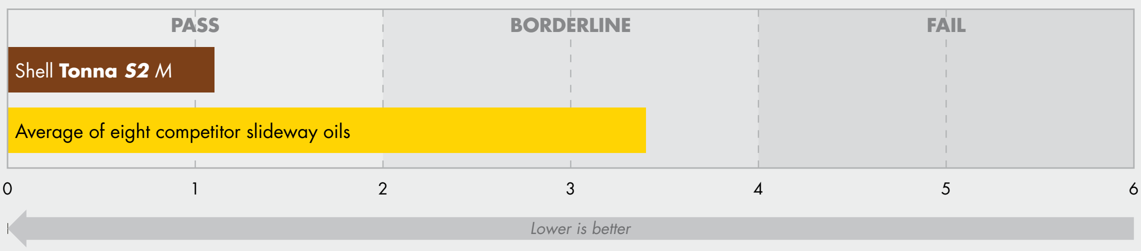
Shell Tonna S2 M is specially designed for the lubrication of machine tool slides, tables and feed mechanisms. It features highly refined mineral oils and special additives to enhance the crucial property of adhesion and reduce stick–slip. It is also a fluid you can trust in applications where there is high exposure to soluble cutting fluids, as it separates completely and immediately for longer coolant life and better cutting performance.

VERY LOW ODOUR, LIGHT COLOUR: Shell Tonna S2 M has been designed to improve the working environments where it is used.

DESIGNED FOR HIGH EFFICIENCY

Your choice of slideway oil can be decisive in managing tramp oils. Better separation between the coolant and the slideway oil enables the slideway oils to be easily removed, thereby limiting the development of bacteria and fungi in the coolant. In the industry-standard test, Shell Tonna S2 M achieved

- ***exceptional levels of separation***
  from all types of coolants: synthetic, semi-synthetic and emulsions.

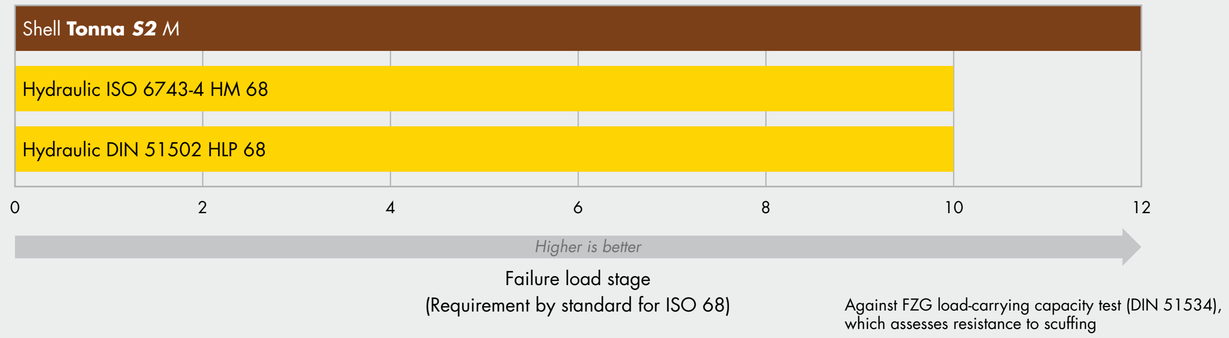


SKC demulsibility test
(Average rating after 1 hour with 12 reference fluids)

DESIGNED TO PROTECT

Protecting components from damage can help to increase your equipment's service life and maximise your return on investment. Shell Tonna S2 M has been formulated to help protect your slideways, gears, bearings and hydraulic system components from corrosion and wear. It

- ***meets or exceeds FZG scuffing test requirements (Institute for Machine Elements Gear Research Centre),*** *which shows its excellent wear protection.*



DESIGNED FOR LONG OIL LIFE

Shell Tonna S2 M has good slideway adhesion characteristics, which restrict its leakage into the cutting fluid sump and reduce consumption. It also helps to maintain uniform working conditions for your machine.

SPECIFICATIONS AND APPROVALS

Shell Tonna S2 M meets the requirements of a wide range of industry bodies and equipment manufacturers. ISO viscosity grades available: 32, 68, 220.

Claims and approvals
Cincinnati Machine P-50 (ISO 220)
Cincinnati Machine P-47 (ISO 68)
Cincinnati Machine P-53 (ISO 32)

Meets requirements
ISO 19378
ISO 6743-13 GA and GB
DIN CGLP

APPLICATIONS

Machine tool slideways, tables and feed mechanisms – for use on a wide range of surface materials, including cast iron and synthetic materials

Hydraulic and gearbox systems – for good anti-wear performance. (Shell Tonna S3 M should also be considered.)

Shell Tonna S2 M 32 and Shell Tonna S2 M 68 are intended for horizontal slide lubrication. Shell Tonna S2 M 220 is intended for vertical slides owing to its higher viscosity grade.

REAL-WORLD VALUE DELIVERY

A wide variety of customers has unlocked value by moving to a higher quality machine tool slideway oil. For instance, some have

- extended coolant sump life by 20%, with the associated product cost savings
- increased their speed of operations and right-first-time machining: one customer reports enhancing margins by $87,000 a year[1]
- enhanced efficiency through exceptional machining accuracy.

FULL PRODUCT AND SERVICE PORTFOLIO

Whatever your needs or application, we can provide a full range of oils and greases, including synthetic, high-performance products and additional services.

[1]Saving reported by one customer. Actual savings may vary, depending on the application, the current oil used, the maintenance procedures and the condition of the equipment.

For more information, please contact

Technical Data Sheet

Previous Name: **Shell Tonna T**

Shell Tonna *S2 M 68*

- *Extra Separation from Coolants*

Machine tool slideway oils

Shell Tonna S2 M oils are specially designed for the lubrication of machine tool slides, tables and feed mechanisms. Their enhanced tackiness and stick-slip characteristics combine to offer superior frictional performance on slideways. They are specially recommended in cases where high exposure to soluble cutting fluids exist.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Ready separation from water-miscible cutting fluids**
  Separates completely and immediately from water-miscible metalworking fluids allowing easy removal by skimming. This helps to achieve longer coolant life, better cutting performance and to reduce Health & Safety issues.
- **Good slideway adhesion**
  Provides very effective adhesion to slideway surfaces, resisting wash-off by metalworking fluids and thus reducing oil consumption and giving more uniform working condition for the machine.
- **Good frictional properties**
  "Stick-slip" problems are overcome allowing more accurate positioning. This provides benefits of improved finished surface quality and dimensional accuracy of work pieces.
- **Good anti-wear performance**
  Provides anti-wear protection for slideways, gears, bearings and hydraulic system components.
- **Excellent corrosion prevention characteristics**
  Provides effective prevention 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.

  Shell Tonna S2 M oils can be used also in the hydraulic and gearboxes system although in such applications Shell Tonna S3 M oils are generally preferable.

  The lower viscosity grades are intended for horizontal slide lubrication (Shell Tonna S2 M 32 or 68). For vertical slides use Shell Tonna S2 M 220.

Specifications, Approvals & Recommendations

- Fives Cincinnati P-50 (ISO 220), P-47 (ISO 68), P-53 (ISO 32)
- ISO 19378 / ISO 6743-13 GA and GB DIN CGLP
- 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 S2 M 68
ISO Viscosity Grade			ISO 3448	68
Kinematic Viscosity	@40°C	mm^2/s	ISO 3104	68
Kinematic Viscosity	@100°C	mm^2/s	ISO 3104	8.6
Viscosity Index			ISO 2909	98
Density	@15°C	kg/m^3	ISO 12185	879
Flash Point (Cleveland Open Cup)		°C	ISO 2592	225
Pour Point		°C	ISO 3016	-24

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.