

**Safety Data Sheet****1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

**Material Name** : Shell Hydraulic S1 M 32  
**Recommended Use / Restrictions of Use** : Hydraulic oil

**Product Code** : 001D7739

**Supplier** : 香港新和亞有限公司臺灣分公司  
臺北市南京東路一段188號7樓7

**Telephone** : 02 2749 1885  
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**2. HAZARDS IDENTIFICATION**

Not classified as toxic chemical substance according to Taiwan Toxic Chemical Substances (TCS)

**GHS Classification** : NOT HAZARDOUS,

**GHS Label Elements Symbol(s)** :

No symbol

**GHS Hazard Statements** : PHYSICAL HAZARDS:  
Not classified as a physical hazard under GHS criteria.

HEALTH HAZARDS:  
Not classified as a health hazard under GHS criteria.

ENVIRONMENTAL HAZARDS:  
Not classified as an environmental hazard under GHS criteria.

**GHS Precautionary Statements** : PREVENTION:  
No precautionary phrases.

RESPONSE:  
No precautionary phrases.

STORAGE:  
No precautionary phrases.

DISPOSAL:  
No precautionary phrases.

**Signal Words** : No signal word  
**Other Hazards which do not result in classification** : Not classified as flammable but will burn.



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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Preparation Description** : Highly refined mineral oils and additives.
- Additional Information** : The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

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### 4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most Important Symptoms/Effects, Acute & Delayed** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Ingestion may result in nausea, vomiting and/or diarrhoea.
- Immediate medical attention, special treatment** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

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### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Specific hazards arising from Chemicals** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic

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- compounds.
- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment & Precautions for Fire Fighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

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### 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

- Personal Precautions, Protective Equipment and Emergency Procedures** : Avoid contact with skin and eyes.
- Environmental Precautions** : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Methods and Material for Containment and Clean Up** : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

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### 7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for Safe Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Conditions for Safe Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Other Advice** : Polyethylene containers should not be exposed to high

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temperatures because of possible risk of distortion.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

#### Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA [Mist.]		5 mg/m3	
	ACGIH	STEL [Mist.]		10 mg/m3	
	TW OEL	TWA [Mist.]		5 mg/m3	

#### Biological Exposure Index (BEI) - See reference for full details

Data not available

**Appropriate Engineering Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

**Individual Protection Measures** : Hygiene measures: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. See also the following information:

**Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].

**Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical

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	resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
<b>Eye Protection</b>	: Wear safety glasses or full face shield if splashes are likely to occur.
<b>Protective Clothing</b>	: Skin protection not ordinarily required beyond standard issue work clothes.
<b>Thermal Hazards</b>	: Not applicable.
<b>Monitoring Methods</b>	: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
<b>Environmental Exposure Controls</b>	: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	: Amber. Liquid at room temperature.
<b>Odour</b>	: Slight hydrocarbon
<b>Odour threshold</b>	: Data not available
<b>pH</b>	: Not applicable.
<b>Initial Boiling Point and Boiling Range</b>	: > 280 °C / 536 °F estimated value(s)
<b>Pour point</b>	: Typical -24 °C / -11 °F
<b>Flash point</b>	: Typical 215 °C / 419 °F (COC)
<b>Upper / lower Flammability or Explosion limits</b>	: Typical 1 - 10 %(V) (based on mineral oil)
<b>Auto-ignition temperature</b>	: > 320 °C / 608 °F
<b>Vapour pressure</b>	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
<b>Relative Density</b>	: Typical 0.869 at 15 °C / 59 °F
<b>Density</b>	: Typical 869 kg/m <sup>3</sup> at 15 °C / 59 °F
<b>Water solubility</b>	: Negligible.
<b>Solubility in other solvents</b>	: Data not available
<b>n-octanol/water partition coefficient (log Pow)</b>	: > 6 (based on information on similar products)
<b>Dynamic viscosity</b>	: Data not available
<b>Kinematic viscosity</b>	: Typical 32 mm <sup>2</sup> /s at 40 °C / 104 °F
<b>Vapour density (air=1)</b>	: > 1 (estimated value(s))
<b>Evaporation rate (nBuAc=1)</b>	: Data not available
<b>Decomposition Temperature</b>	: Data not available
<b>Flammability</b>	: Data not available



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### 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	: Stable.
<b>Possibility of Hazardous Reactions</b>	: Data not available
<b>Conditions to Avoid</b>	: Extremes of temperature and direct sunlight.
<b>Incompatible Materials</b>	: Strong oxidising agents.
<b>Hazardous Decomposition Products</b>	: Hazardous decomposition products are not expected to form during normal storage.

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### 11. TOXICOLOGICAL INFORMATION

<b>Basis for Assessment</b>	: Information given is based on data on the components and the toxicology of similar products.
<b>Likely Routes of Exposure</b>	: Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
<b>Acute Oral Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
<b>Acute Dermal Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
<b>Acute Inhalation Toxicity</b>	: Not considered to be an inhalation hazard under normal conditions of use.
<b>Skin Corrosion/Irritation</b>	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
<b>Serious Eye Damage/Irritation</b>	: Expected to be slightly irritating.
<b>Respiratory Irritation</b>	: Inhalation of vapours or mists may cause irritation.
<b>Respiratory or Skin Sensitisation</b>	: Not expected to be a skin sensitiser.
<b>Repeated Dose Toxicity</b>	: Not expected to be a hazard.
<b>Aspiration Hazard</b>	: Not considered an aspiration hazard.
<b>Germ Cell Mutagenicity</b>	: Not considered a mutagenic hazard.
<b>Carcinogenicity</b>	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
<b>Reproductive and Developmental Toxicity</b>	: Not expected to be a hazard.
<b>Additional Information</b>	: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled



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with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

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### 12. ECOLOGICAL INFORMATION

- Basis for Assessment** : Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.
- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.
- Microorganisms** : Data not available
- Mobility** : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulative Potential** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

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### 13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### 14. TRANSPORT INFORMATION

**Land (as per ADR classification): Not regulated**

This material is not classified as dangerous under ADR regulations.

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### IMDG

This material is not classified as dangerous under IMDG regulations.

### IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

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## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

### Local Inventories

**EINECS** : All components listed or polymer exempt.

**TSCA** : All components listed.

### Other Information

: Rules on hazard communication of dangerous and harmful materials. Rules on public hazardous products and flammable pressurized gases installation and safety management. Rules on labour safety and hygiene facilities. Standards on workplace atmosphere of dangerous and hazardous materials. Rules on waste storage and disposal installation standard. Rules on road transport safety. Rules on toxic chemicals. Standard on harm prevention of specific chemical substance. Rules on organic solvent poison prevention. Rules on pressurized gas labour safety.

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## 16. OTHER INFORMATION

**MSDS Version Number** : 1.0

**MSDS Effective Date** : 24.08.2010

**MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.

**MSDS Distribution** : The information in this document should be made available to all who may handle the product.

**Key Literature References** : The content and format of this safety data sheet is in accordance with the GHS guidelines.

**Disclaimer** : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.