



## SAFETY DATA SHEET

Page 1 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

**Product name:** ZF Hydraulic 46

### 1. COMPANY DETAILS AND PRODUCT IDENTIFICATION

COMPANY: ENZED® Parker Hannifin (Australia) Pty Limited (ABN 89 008 446 893)  
ADDRESS: Lot 9 Chapple Street, Wodonga, Victoria, 3690  
TELEPHONE NUMBER: 13 13 62  
FAX NUMBER: (02) 6056 3099  
EMERGENCY TELEPHONE NUMBER: 13 13 62  
PRODUCT NAME: ZF Hydraulic 46  
OTHER NAMES: None  
MANUFACTURER'S PRODUCT CODE: EZ5-2761  
USE: Mineral oil based hydraulic oil  
ADDITIONAL INFORMATION: Refer to Product Information Sheet for additional information.  
OTHER INFORMATION: Visit our website: [www.enzed.com.au](http://www.enzed.com.au)  
Email: [oil@enzed.com.au](mailto:oil@enzed.com.au)

### 2. HAZARDS IDENTIFICATION

HAZARD CLASSIFICATION: NON-HAZARDOUS SUBSTANCE  
NON-DANGEROUS GOODS  
Hazard classification according to criteria of NOHSC.  
Dangerous goods classification according to Australian Dangerous Goods Code.

RISK PHRASE (R):

IRRITANCY OF PRODUCT: Not classified as an irritant.

SENSITISATION OF PRODUCT: Not known to be a sensitiser.

TERATOGENICITY: No teratogenic effects known.

OTHER INFORMATION: 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 environment on disposal. All used oils should be handled with caution and skin contact avoided as far as possible.





## SAFETY DATA SHEET

Page 2 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 3. IDENTIFICATION / COMPOSITION OF INGREDIENTS

CHEMICAL CHARACTERISTICS: Liquid

INGREDIENTS:-

CHEMICAL ENTITY:	CAS No.	PROPORTION
Mineral Oil	64742-65-0	> 90%
Ingredients determined not to be hazardous	Mixture	To 100%

OTHER INFORMATION: The petroleum oils in this product contain less than 3% DMSO extract as measured by IP 346 test method.

### 4. FIRST AID MEASURES

#### HEALTH EFFECTS

SWALLOWED:

If a large quantity is ingested seek immediate medical attention. Give water to drink. DO NOT induce vomiting. If vomiting occurs get immediate medical attention due to aspiration into lungs risk.

EYE: Immediately irrigate with copious amounts of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

SKIN: Remove contaminated clothing and wash skin thoroughly with plenty of soap and water. High pressure injection through the skin requires **URGENT** medical attention for possible incision, irrigation and/or debridement. Contact with molten material will require treatment by a physician for burns (Do not remove material).

INHALED: Remove victim from exposure to fresh air – avoid becoming a casualty. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist. If breathing laboured and patient cyanotic (blue), ensure airways are clear and have qualified person give oxygen through face mask. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage and seek urgent medical aid.

FIRST AID FACILITIES: Normal washroom facilities are generally suitable. Ensure an eye wash station and safety shower is available and ready for use.

ADVICE TO DOCTOR: Treat symptomatically.

OTHER INFORMATION: Keep water and mild soap near work site.





## SAFETY DATA SHEET

Page 3 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 5. FIRE FIGHTING MEASURES

#### FIRE/EXPLOSION HAZARD

HAZARDS OF USE/STORAGE:	Product is a C2 combustible liquid according to AS 1940. This product is combustible if preheated.
HAZARDS FROM COMBUSTION PRODUCTS:	Combustion products may include: oxides of carbon, nitrogen and sulphur, a complex mixture of airborne unidentified organic and inorganic solid and liquid particulates.
FIRE-FIGHTING RECOMMENDATIONS:	If safe to do so, remove containers from path of fire. Keep storage tanks, pipelines, containers, fire exposed surfaces, etc. cool with water spray. Avoid spreading liquid and fire by water flooding.
PRECAUTION:	Water may cause splattering.
SUITABLE EXTINGUISHING MEDIA:	Use foam, carbon dioxide or dry chemical.
PROTECTIVE MEASURES:	Fire fighters should wear self-contained breathing apparatus if risk of exposure to products of combustion.
REACTIVITY:	May react with strong oxidising agents.

### 6. ACCIDENTAL RELEASE MEASURES

SPILLS & DISPOSAL:	Slippery when spilt. Avoid accidents, clean up immediately.
	<b>CLEAN-UP PROCEDURE - SMALL SPILLS (20L or less):</b> Absorb or contain liquid with sand, earth or spill control material. Shovel up using non-sparking tools and place in a sound labelled sealable container for subsequent safe disposal. Place leaking containers in a sound labelled drum. Scrub contaminated surfaces with detergent solution. Retain washings as contaminated waste.
	<b>CLEAN-UP PROCEDURES - LARGE SPILLS (Greater than 20L):</b> Transfer to a sound labelled, sealable container for product recovery or safe disposal. Treat residues as for small spills.
	<b>PERSONAL PRECAUTIONS:</b> Extinguish naked flames. Remove ignition sources. No smoking. Avoid sparks. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Evacuate the area of non-essential personnel. Shut off leaks, if possible without personal risk. Do not breathe vapours. Ventilate contaminated area thoroughly. Dispose of according to local regulations.





## SAFETY DATA SHEET

Page 4 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 6. ACCIDENTAL RELEASE MEASURES (CONT)

**OTHER INFORMATION:** PROCEDURES IN CASES OF LEAKAGE OR BREAKAGE: Stop the source of the leak or release and contain spill if possible. Ventilate area. Use respirator and protective clothing outlined in this MSDS. Cover spill with inert absorbent earth. Use a stiff brush to mix thoroughly. Sweep up and place in a sound labelled disposable container. Scrub contaminated area with detergent and water using a stiff brush. Pick up liquid with additional absorbent material and place in a sound labelled disposable container. Prevent contamination of groundwater or surface water.

### 7. HANDLING AND STORAGE

**PRECAUTIONS FOR SAFE HANDLING:** When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Prevent spillages. Ensure the appropriate personal protective equipment is used when handling this product. Ensure high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking smoking or using the toilet.

**SAFE STORAGE CONDITIONS:** Keep containers closed at all times. Store in a cool place out of direct sunlight. Store away from oxidising agents. Check containers regularly for leaks.

**CORROSIVENESS:** Not corrosive.

**STORAGE REGULATIONS:** Store in a well ventilated place away from ignition sources, oxidising agents, foodstuffs and clothing.  
Keep containers closed when not in use.  
Refer to AS 1940 – The Storage and Handling of Flammable Liquids, and NOHSC: 1015 – National Standard for Storage and Handling of Workplace Dangerous Goods for further information.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**NATIONAL EXPOSURE STANDARDS:** No exposure standard has been established for this product. NOHSC Exposure Standard: Oil mists – time weighted average (TWA) 5 mg/m<sup>3</sup> is recommended.

**OTHER EXPOSURE INFORMATION:** Exposure Standard means the average concentration of a particular substance in the worker's breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all workers. It can be of three forms; time-weighted average (TWA), peak limitation, or short term exposure limit (STEL).

**ENGINEERING CONTROLS:** Maintain concentration below recommended exposure limit. Special ventilation is not normally required. However, in the operation of certain equipment or at elevated temperatures mists or vapour may be generated and localised exhaust ventilation should be provided to maintain airborne concentration levels below the exposure standard or the Manufacturer's recommended exposure standard.





## SAFETY DATA SHEET

Page 5 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CONT)

RESPIRATORY PROTECTION:	A respirator is not normally required. Airborne concentrations should be kept at lowest level possible. If vapours, mists or dusts are generated and the recommended exposure limit for the product is exceeded, use appropriate AS/NZS 1715/1716 approved half-face filter respirator suitable for organic vapours or air supplied respirator are worn. Air supplied respirators should always be worn when the airborne concentration of the contaminant or the oxygen content of the air is unknown
EYE PROTECTION:	Safety glasses, goggles or face shield as appropriate.
HAND PROTECTION:	PVC gloves.
FOOTWEAR:	Enclosed footwear.
BODY PROTECTION:	Overalls or similar protective apparel.
HYGIENE MEASURES:	Always wash hands before eating, drinking, smoking or using the toilet. If contamination occurs, change clothing. Launder contaminated clothing before reuse. Discard internally contaminated gloves.
SPECIAL PROTECTIVE MEASURES:	The product will not burn unless preheated. Isolate from sources of heat, naked flames or sparks.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM:	Liquid
APPEARANCE:	Clear and bright liquid.
COLOUR:	Clear amber/brown
ODOUR:	Mild
MELTING POINT:	Less than 0°C
BOILING POINT:	Greater than 300°C
DENSITY @ 15°C (kg/L):	0.867 typical
FLASHPOINT (ASTM D-93), Closed Cup:	>150°C
FLAMMABILITY LIMITS -LOWER:	Approximately 1.5%
FLAMMABILITY LIMITS -UPPER:	Approximately 6.0%
FLAMMABILITY:	Combustible Liquid C2 according to AS 1940.





## SAFETY DATA SHEET

Page 6 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 9. PHYSICAL AND CHEMICAL PROPERTIES (CONT)

SOLUBILITY IN WATER:	Not soluble.
SOLUBILITY IN ORGANIC SOLVENTS:	Soluble in petroleum solvents.
VAPOUR PRESSURE:	Less than 0.1 kPa
VAPOUR DENSITY (Air = 1):	Greater than 2.0
VISCOSITY @ 40 °C (mm <sup>2</sup> /s):	Approximately 46
EVAPORATION RATE:	Less than 1 (n-butyl acetate = 1)
AUTO-IGNITION TEMPERATURE:	Greater than 250°C
EXPLOSION PROPERTIES:	Not considered an explosion risk under normal conditions of use.
OTHER INFORMATION:	These physical data and other properties do not constitute a specification.

### 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under normal conditions of use.
CONDITIONS TO AVOID:	Heat, direct sunlight, open flames or other sources of ignition.
INCOMPATIBLE MATERIALS:	Strong oxidising agents.
HAZARDOUS REACTIONS:	Will react with strong oxidising agents.
HAZARDOUS POLYMERISATION:	Will not occur.

### 11. TOXICOLOGICAL INFORMATION

TOXICOLOGY INFORMATION:	This product contains petroleum base oils, which may be refined by various processes including severe solvent extraction, hydro cracking and hydro treating. These oils have not been listed in the U.S. National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as carcinogenic or probably carcinogenic to humans. Oral LD50 ({{UDO1}}) :{ UDO2} mg/kg.
INHALATION:	Inhalation of mists or aerosols can produce respiratory irritation.
INGESTION:	May cause mild irritation of the mouth, throat and stomach with nausea and mild diarrhoea. Large amounts can cause vomiting which can lead to aspiration of vomited material into the lungs.
SKIN:	Will have a de-fatting effect on the skin. Contact with skin may result in irritation.





## SAFETY DATA SHEET

Page 7 of 8  
Issue Date: 7th August 2015  
ZF Hydraulic 46  
Version: 1

### 11. TOXICOLOGICAL INFORMATION (CONT)

EYE:	May cause watering of eyes.
REPRODUCTIVE TOXICITY:	This product contains small amounts of para-dodecylphenol. Rats when given high, repeated daily doses by oral intubation experienced adverse reproductive effects. The relevance of these effects to humans is uncertain.
CHRONIC EFFECTS:	Prolonged or repeated exposure may result in irritation, with the possibility of dermatitis.
MUTAGENICITY:	Mutagenic effects not known.
CARCINOGENICITY:	Product is not a known carcinogen.

### 12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:	Leaching and penetration through soils is generally regarded as resulting in long-term persistence. Fresh or used product may be harmful to aquatic life. Do not allow material to enter drains or watercourses.
-------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### 13. DISPOSAL CONSIDERATIONS

DISPOSAL CONSIDERATIONS:	Dispose of according to federal, E.P.A. and state regulations.
--------------------------	----------------------------------------------------------------

### 14. TRANSPORT INFORMATION

TRANSPORT INFORMATION:	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
------------------------	----------------------------------------------------------------------------------------------------------------------------

### 15. REGULATORY INFORMATION

POISON SCHEDULE:	Not scheduled.
PACKING & LABELLING:	No special packaging or labelling requirements.
AUSTRALIAN INVENTORY STATUS:	All components are listed or exempted.





ENZED® Parker Hannifin (Australia) Pty Limited ABN 89 008 446 893

Lot 9 Chapple Street, Wodonga Victoria 3690

ENZED® Parker Hannifin (New Zealand) Pty Limited ABN 89 008 446 893

No 5 Bowen Road, Mt Wellington N.Z 1060

PHONE: 13 13 62 (AU) | 0800 4 enzed (NZ) | www.enzed.com.au | www.enzed.co.nz

## SAFETY DATA SHEET

Page 8 of 8

Issue Date: 7th August 2015

ZF Hydraulic 46

Version: 1

### 16. OTHER INFORMATION

CONTACT PERSON/POINT: General Manager 13 13 62

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.

LITERATURE REFERENCES:

- \* NOHSC: 2011 National Code of Practice for the preparation of Material Safety Data Sheets.
- \* NOHSC: 1008 Approved Criteria for Classifying Hazardous Substances.
- \* NOHSC: 10005 List of Designated Hazardous Substances.
- \* NOHSC: 1005 Control of Workplace Hazardous Substances, National Code of Practice.
- \* NOHSC: 2007 Control of Workplace Hazardous Substances, National Code of Practice.
- \* NOHSC: 1003 Exposure Standards for Atmospheric Contaminants in the Occupational Environment, National Exposure Standards.
- \* NOHSC: 3008 Exposure Standards for Atmospheric Contaminants in the Occupational Environment, Guidance Note.
- \* NOHSC: 1015 Storage and Handling of Workplace Dangerous Goods, National Standard.
- \* NOHSC: 2017 Storage and Handling of Workplace Dangerous Goods, National Code of Practice.
- \* SUSDP: Standard for the Uniform Scheduling of Drugs and Poisons
- \* ADG: Australian Dangerous Goods Code
- \* MSDS of component materials.

LAST CHANGE: Supersedes document issued: New Document  
Reason/s for revision: Alignment to NOHSC requirements.

MR518070/1

END OF SDS

Blended under licence for ENZED by Hi-Tec Oils Pty Ltd.

