



Hi-Tec Oil Traders Pty Ltd ABN 28 053 837 362

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[www.hi-tecoils.com.au](http://www.hi-tecoils.com.au)

## PRODUCT DATA SHEET

### BIO-HYDRAULIC OILS S TYPE

#### PRODUCT DESCRIPTION

**Bio-Hydraulic Oils S Type** are biodegradable hydraulic lubricants containing synthetic fatty esters, stabilizers, anti-wear additives, corrosion inhibitors and foam inhibitors. They are biodegradable according to OECD 301B and meet the HEES requirements.

**Bio-Hydraulic Oils S Type** do not contain mineral lubricating oils: they are based on high quality synthetic fatty esters derived from Australian harvested vegetable oils, which in comparison with mineral oil based lubricants, are more easily bio-degraded, less hazardous and more suitable for use in environmentally sensitive areas. They are much less likely to cause any harm to soil, waterways or other parts of the environment than mineral oil based lubricants.

**Bio-Hydraulic Oils S Type** display excellent viscosity - temperature characteristics due to the high naturally inherent viscosity indices of the vegetable oil based synthetic esters. They are specially formulated for high exposure or high temperature applications. The optimum operating temperature range is from -10°C to 100°C.

Compared with mineral oil based lubricants **Bio-Hydraulic Oils S Type** are:

- Safer for users and the environment
- More easily bio-degradable
- Lower in toxicity – free from heavy metals
- Enhanced in performance characteristics
- Less changeable in viscosity as operating temperatures increase due to higher viscosity index
- Higher in lubricity resulting in lower equipment operating temperatures

**Bio-Hydraulic Oils S Type** were developed to meet and exceed the current requirements of the agricultural, forestry, heavy engineering, construction and marine equipment industries.

**Bio-Hydraulic Oils S Type** can be used in mobile or stationary equipment such as forklifts, cranes, tractors, graders, bulldozers, hoists, marine equipment, mining equipment, ski lifts, etc. and is particularly suited to use in environmentally sensitive areas such as:

- National or State parks
- Near or on waterways
- Recreational areas
- Road, rail and tramways
- Local Government Maintenance Vehicles
- Water, Electricity, Telecommunication and Gas Service providers etc.

**Bio-Hydraulic Oils S Type** are fully miscible and compatible with mineral oils therefore changing to **Bio-Hydraulic Oils S Type** is simple as no prior system flushing is required.



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**Bio-Hydraulic Oils S Type** contain ester components that may be incompatible with certain elastomers used as seals, hoses or other components in the customer's equipment. Prior to full scale commercial use, it is recommended that compatibility with system components is determined by the customer.

## Elastomer Compatibility

ISO 1629	DESCRIPTION	S*	MD*	D*
NBR	Medium to high nitrile rubber (Buna N, >30% acrylonitrile)	C	C	C
FPM	Fluoroelastomer (Viton®)	C	C	C
CR	Neoprene	S	S	S
IIR	Butyl rubber	S	N	N
EPDM	Ethylene propylene rubber	N	N	N
PU	Polyurethane	C	C	C
PTFE	Teflon®	C	C	C

\*\* (S- Static, MD- Mild Dynamic, D- Dynamic)

C = Compatible

S = Satisfactory for short term use, but replacement with a completely compatible elastomer is recommended at the earliest convenience.

N = Not Compatible

Avoid contamination with water. Where possible drying equipment should be used and water drained after any shut-down period.

Hi-Tec suggests that the equipment manufacturers' recommendations for viscosity grade, performance requirements and general operating conditions should be checked prior to use.

## TYPICAL PROPERTIES

Property	Unit	Test Method	Typical Results	
ISO Viscosity			<b>46</b>	<b>68</b>
Item Code (HI5-)			2916	2921
Appearance	-	Visual	Yellow to amber fluid	
Density @ 15°C	kg/L	ASTM D1298	0.92	0.92
Kinematic Viscosity @ 0°C	mm <sup>2</sup> /s	ASTM D445	320	554
Kinematic Viscosity @ 20°C	mm <sup>2</sup> /s	ASTM D445	109	135
Kinematic Viscosity @ 40°C	mm <sup>2</sup> /s	ASTM D445	47.5	68
Kinematic Viscosity @ 100°C	mm <sup>2</sup> /s	ASTM D445	9.5	12.5
Viscosity Index	-	ASTM D2270	190	185
Pour Point	°C	ASTM D97	<-30	<-30
Flash Point Open Cup	°C	ASTM D92	300	304
Fire Point	°C	ASTM D92	360	360





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Air Release		ASTM D3427	7 min	7 min
Corrosiveness to Copper	-	ASTM D130	1a	1a
Rust Preventing Characteristics	-	ASTM D665	Pass	Pass
Acid Number	mg KOH/g	ASTM D974	2	2
Foam Test @ 25°C	ml-ml	ASTM D892	50-0	50-0
Dry TOST	hrs	ASTM D943 mod.	800	800
Fire Point	°C	ASTM D92	360	360
Pump Test		ASTM D2882	<5 mg wear	<5 mg wear
Gear Lubrication		DIN 51354-2	>12 FZG load stage	>12 FZG load stage
Water Separability	ml-ml-ml	ASTM D1401	41-39-0 (30) min	42-38-0 (30) min



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## PRODUCT DATA SHEET

**Available in:** 200 Litres, 20 Litres, 5 Litres and 1 Litre

"Hi-Tec Oil Traders Pty Ltd (Hi-Tec Oils) has endeavoured to ensure that all information, representations and specifications contained in this product data sheet are accurate at the time of publication. This general information should be used in conjunction with appropriate inquiries by users of the product including consultation with the vehicle or equipment manufacturers published information.

It is the responsibility of users of the product to use the product safely. Users should consult the safety data sheets for each product at [www.hi-tecoils.com.au](http://www.hi-tecoils.com.au). Hi-Tec Oils takes no responsibility for injury or damage if the product is used in an inappropriate or unsafe manner.

Our product warranty and product quality statement can be viewed at [www.hi-tecoils.com.au](http://www.hi-tecoils.com.au)"

**Effective:** November 2022

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