

Castrol Hyspin AWS 22

Description

The Castrol Hyspin AWS hydraulic oil range is based upon highly refined mineral oil with a low zinc containing anti-wear system.

Application

Hyspin AWS has been specially formulated to provide good anti-wear and thermal stability performance using the very latest additive technology. The careful blend of additives with a high quality base stock ensures that Hyspin AWS has excellent hydrolytic and oxidative stability while exhibiting a minimal tendency to produce sludge and deposits. In addition, Hyspin AWS provides corrosion protection to ferrous and yellow metal components found within a hydraulic system.

This range is designed for use in industrial hydraulic systems which require anti-wear protection. It is also suitable for other duties in which lubricants of high oxidation stability and lubrication performance are required, such as lightly loaded gears, variable speed units and bearings.

The Hyspin AWS range is fully compatible with elastomer materials commonly used for static and dynamic seals, such as nitrile, silicone and fluorinated (e.g. Viton) polymers.

Hyspin AWS is classified as follows:
DIN 51502 classification - HLP
ISO 6743/4 - Hydraulic Oils Type HM

Hyspin AWS grades meet the requirements (for appropriate viscosity grade) of:
DIN 51524 Part 2
Cincinnati Lamb (Millacron) P 68-69-70
Denison (Parker Hannafin) HF-0
US Steel 126 & 127
Eaton (formerly Vickers) I-286-S & M-2950-S
Bosch Rexroth RE90220

Advantages

- Good thermal and oxidative stability leads to longer operating life, reduction in lubricant costs and minimises deposit formation giving a cleaner system.
- Excellent anti-wear performance gives wear protection and reduces downtime from unscheduled maintenance.
- Good filterability characteristics (including in the presence of water) enables cost savings to be made from increased filter life and reduced maintenance.
- Excellent water separation and hydrolytic stability means reduced downtime through prolonged lubricant life and increased equipment reliability.

Typical Physical Characteristics

TEST	AWS 10	AWS 15	AWS 22	AWS 32	AWS 46	AWS 68	AWS 100	AWS 150
Kinematic Viscosity								
@ 40°C, cSt	10	15	22	32	46	68	100	150
@ 100°C, cSt	2.55	3.2	4.25	5.3	6.65	8.5	11.1	14.5
Viscosity Index	75	75	102	102	102	102	97	97
Relative Density @ 20°C	0.875	0.88	0.865	0.87	0.875	0.88	0.88	0.885
Acidity, mgKOH/g	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Air Release Value @ 50°C	4	4	4	4	8	8	12	18
Pour Point, °C	-39	-39	-30	-30	-21	-21	-21	-21
Closed Flash Point, °C	160	160	170	200	220	220	220	220
Foam sequence 1, mins	30/0	30/0	30/0	30/0	30/0	30/0	30/0	-
Demulsification (D1401) mins	10	10	10	10	15	15	20	-
4-Ball 1hr Wear @ 30kg, 1640 rpm, mm			0.4	0.4	0.4	0.4	0.4	0.4
FZG (A/B.3/90) Fail Stage	11	11	11	11	12	12	12	12
Vickers HP Vane Pump Test				25	25	25		

Additional Information

Seal Compatibility: Suitable for use with Nitrile, Buna-N, Viton and Silicone seal materials.

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Health and Safety information sheets are available for all Castrol products from the address below:

Castrol (U.K.) Limited, Pipers Way, Swindon, Wiltshire SN3 1RE, England, Telephone:
Orders/Enquiries (08459)645111, Technical Enquiries (01793)452111, Fax (01793)486083

All reasonable care has been taken to ensure that the information contained in this publication is accurate as at the date of printing. It should be noted however that the information above may be affected by changes occurring subsequent to the date of printing in the blend formulation or methods of application of any of the products referred to or in the requirements of any specific application approval relating to any such products.

www.castrol.com



1. Product and company identification

Product name Hyspin AWS 22
MSDS # 456614
Historic MSDS #: 12059-AW AE
Code 456614-US02 US03
Product use hydraulic oil
Manufacturer Castrol Industrial North America, Inc.
 150 W. Warrenville Road
 Naperville, IL 60563
Supplier Castrol Canada, Inc.
 3660 Lakeshore Blvd. West
 Toronto, Ontario M8W 1P2
 CANADA
 Product Information: 416-252-5511
EMERGENCY SPILL 1 (613) 996-6666 CANUTEC (Canada)
INFORMATION:

2. Hazards identification

Physical state Liquid.
Color Clear. Yellow.
Emergency overview CAUTION!
 MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
 Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry Dermal contact. Eye contact. Inhalation. Ingestion.
Potential health effects
 Eyes May cause eye irritation.
 Skin May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
 Inhalation May cause respiratory tract irritation.
 Ingestion Ingestion may cause gastrointestinal irritation and diarrhea.
 See toxicological information (section 11)

3. Composition/information on ingredients

Ingredient name	CAS #	%
Base oil - highly refined	Varies	95 - 100

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4. First aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
Skin contact	Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately. Get medical attention if symptoms occur.

5. Fire-fighting measures

Flash point	Open cup: 205°C (401°F) [Cleveland.]
Fire/explosion hazards	In a fire or if heated, a pressure increase will occur and the container may burst.
Unusual fire/explosion hazards	Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts and oxidizing materials.
<u>Extinguishing media</u>	
Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	Do not use water jet.
Fire-fighting procedures	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)
Protective clothing (fire)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
<u>Methods for cleaning up</u>	
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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7. Handling and storage

Handling	Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
Storage	Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
Base oil - highly refined	ACGIH (United States), STEL: 10 mg/m ³ 15 minute(s). Form: Mineral oil, mist TWA: 5 mg/m ³ 8 hour(s). Form: Mineral oil, mist

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Control Measures	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
Personal protection	
Eyes	Avoid contact with eyes. Safety glasses with side shields or chemical goggles.
Skin and body	Avoid contact with skin and clothing. Wear suitable protective clothing.
Respiratory	Use adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.
Hands	The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

9. Physical and chemical properties

Physical state	Liquid.
Color	Clear. Yellow.
Odor	Mild.
Odor threshold	Not available.
Flash point	Open cup: 205°C (401°F) [Cleveland.]
Specific gravity	Not available.
Density	870 kg/m ³ (0.87 g/cm ³) at 15.6°C
pH	Not available.
Viscosity	Kinematic: 22 mm ² /s (22 cSt) at 40°C
Boiling point / Range	Not available.

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Melting point / Range	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Evaporation rate	Not available.
Solubility	Insoluble in water.
LogK _{ow}	Not available.

10. Stability and reactivity

Stability and reactivity	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
Incompatibility with various substances	Reactive or incompatible with the following materials: oxidizing materials and acids.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

Other information

Potential chronic health effects

Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Reproductive effects	No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure: None known.

12. Ecological information

No testing has been performed by the manufacturer.

13. Disposal considerations

Waste information The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

NOTE: The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal

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14. Transport information

Not classified as hazardous for transport (DOT, TDG, IMO/IMDG, IATA/ICAO)

15. Regulatory information

WHMIS (Canada) Not controlled under WHMIS (Canada).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Inventories

Canada inventory	All components are listed or exempted.
United States inventory (TSCA 8b)	All components are listed or exempted.
Europe inventory	All components are listed or exempted.
Australia inventory (AICS)	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Japan inventory (ENCS)	All components are listed or exempted.
Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.

16. Other information

Label requirements CAUTION !
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

History

Date of issue 08/20/2008.
Date of previous issue No previous validation.
Prepared by Product Stewardship

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.

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