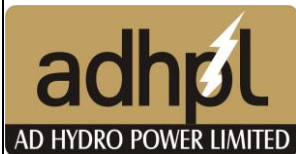


ANNEXURE – 5

MSDS of Hazardous Chemicals

<u>Status</u>	<u>Prepared by</u>	<u>Reviewed & Checked by</u>	<u>Approved by</u>
<i>For issue</i>	<i>Dr. Deepak Tikoo – Sr. Manager EHS&S</i>	<i>Pankaj Kapoor –VP-O&M</i>	<i>O P Ajmera – Director & CEO</i>
Date:22.09.2021		Revision - 03	Page 1 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

14



SAFETY DATA SHEET Crown Trade Red Oxide Primer

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME Crown Trade Red Oxide Primer
PRODUCT NO. 4018737
APPLICATION Protective coating. Applied by brush or roller. See container for details.
SUPPLIER Crown Trade
 Crown Paints
 Crown House
 Hollins Rd
 Darwen
 Lancs, BB3 0BG
 Tel: 01254 704951
 Fax: 01254 702678
 crowntrade.co.uk
CONTACT PERSON Product SHE Information Manager

2 HAZARDS IDENTIFICATION

Flammable. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.
CLASSIFICATION (1999/45) R10, R66, R67.

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquid and vapours

HUMAN HEALTH

Inhalation of organic solvent vapours may be hazardous to health.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content %	Classification (67/54/EEC)
ETHYL METHYL KETOXIME	202-496-6	96-29-7	< 1%	Carc. Cat. 3;R40 Xn;R21 R43 Xi;R41
Naptha (petroleum), hydrotreated heavy - D40 Dearomatised	265-150-3	64742-48-9	10-30%	Xn;R65. R10,R66,R67.
Naptha (petroleum), hydrotreated heavy - D60 High Flash		64742-48-9	< 1%	Xn;R65. R66,R67.
Noojcanoic acid, cobalt salt	248-373-0	27253-31-2	< 1%	Xn;R22. Xi;R38. N;R51/53. R43.
XYLENE	215-535-7	1330-20-7	< 1%	R10 Xn;R20/21 Xi;R38

The Full Text for all R-Phrases is Displayed in Section 16

COMPOSITION COMMENTS

The product contains organic solvents. Petroleum substances contained in this product contain less than 0.1% w/w benzene.

4 FIRST-AID MEASURES

GENERAL INFORMATION

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

NOTES TO THE PHYSICIAN

Consult safety data sheet.

INHALATION

Remove to fresh air, keep the patient warm and at rest. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in a prone position with head to the side (recovery position) and seek medical advice.

INGESTION

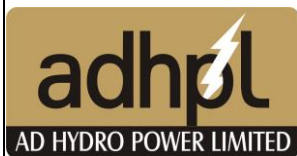
If accidentally swallowed obtain immediate medical advice. Show this safety data sheet. Keep at rest. Do not induce vomiting. If conscious give milk or water to drink.

SKIN CONTACT

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do not use solvents or thinners.

1 / 8

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 2 of 51



29

Crown Trade Red Oxide Primer

EYE CONTACT

Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart, and seek medical advice.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Do not use water jet.

SPECIAL FIRE FIGHTING PROCEDURES

Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

UNUSUAL FIRE & EXPLOSION HAZARDS

No unusual fire or explosion hazards noted.

SPECIFIC HAZARDS

Fire will produce dense black smoke containing hazardous products of combustion (see section 10). Decomposition products may be hazardous to health.

PROTECTIVE MEASURES IN FIRE

Appropriate self-contained breathing apparatus may be required.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Exclude sources of ignition and ventilate the area. Floors may become slippery. Warn others of the dangers present and exclude non-essential personnel. Refer to protective measures listed in sections 7 and 8. Avoid breathing vapours.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains or water courses. If the product enters drains or sewers the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the Environment Agency.

SPILL CLEAN UP METHODS

Contain and collect spillages with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a clearly labelled suitable container for disposal in accordance with the waste regulations (see section 13). Clean preferably with a detergent; avoid the use of solvents.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Solvent vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. For personal protection, see section 8. Avoid skin and eye contact. Avoid inhalation of vapour. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits. Additionally, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Keep the container tightly closed. Exclude sources of heat, sparks and open flame. Smoking, eating and drinking should be prohibited in areas of storage and use. Never use pressure to empty; the container is not a pressure vessel. Always keep in the same material as the supply container. Good housekeeping standards and regular safe removal of waste materials will minimise risks of spontaneous combustion and other fire hazards. The Manual Handling Operations Regulations may apply to the handling of containers of this product. Packs with a volume content of 5 litres or more may be marked with a maximum gross weight. To assist employers the following method of calculating the weight for any pack size is given. Take the pack size volume in litres and multiply this figure by the specific gravity value given in section 9. This will give the net weight of the coating in kilograms. Allowance will then have to be made for the immediate packaging to give an approximate gross weight.

USAGE DESCRIPTION

Use product only in accordance with methods listed in section 1.

STORAGE PRECAUTIONS

Although the storage of this product is not subject to specific statutory requirements, the principles contained in HSE guidance note HS(G)51 'Storage of Flammable liquids in Containers' should be observed. Observe the label precautions. Store between 5°C and 30°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking.

STORAGE CLASS

The storage of this product is not subject to any statutory requirements.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
Naptha (petroleum), hydrotreated heavy - D40 Dearomatised	WEL	197 ppm	1200 mg/m3	No std.	No std.	
Naptha (petroleum), hydrotreated heavy - D60 High Flash	WEL	197 No std.	1200 No std.	ppm	mg/m3	
XYLENE	WEL	50 ppm(Sk)	220 mg/m3(Sk)	100 ppm(Sk)	441 mg/m3(Sk)	

WEL = Workplace Exposure Limit.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 3 of 51

Crown Trade Red Oxide Primer

INGREDIENT COMMENTS

LT = Long term exposure limit, ST = Short term exposure limit, TWA = Time weighted average, Ppm = Parts per million Mgm-3 = Milligrams per cubic metre, Sk = indicates a risk of absorption through skin.

PROTECTIVE EQUIPMENT



PROCESS CONDITIONS

Special precautions should be taken during surface preparation of pre-1960's paint surfaces over wood and metal as they may contain harmful lead. All engineering control measures used to control exposure to hazardous substances must be selected, maintained, examined and tested to meet the requirements of the Control Of Substances Hazardous to Health regulations (COSHH). Similarly all personal protective equipment, including respiratory protective equipment, must be selected, issued and maintained to meet the requirements of COSHH. These requirements include the provision of any necessary information, instruction and training with regard to their use.

ENGINEERING MEASURES

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of solvent vapour below the relevant workplace exposure limits, suitable respiratory protection should be worn. (See personal protection below). Dry sanding, flame cutting and/ or welding of the dry paint film will give rise to dust and/ or hazardous fumes. Wet sanding should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be worn.

RESPIRATORY EQUIPMENT

If exposure to hazardous substances identified above cannot be controlled by the provision of local exhaust ventilation and good general extraction, suitable respiratory protective equipment should be worn. Where high levels of solvent vapour are likely to arise (e.g. confined spaces) air fed respiratory protective equipment should be worn.

HAND PROTECTION

When skin exposure may occur wear gloves. Advice should be sought from glove suppliers on appropriate types. Barrier creams may help to protect exposed areas of the skin but are not substitutes for full physical protection. They should not be applied once exposure has occurred. Always wash your hands before eating smoking or using the toilet.

EYE PROTECTION

Eye protection designed against liquid splashes should be worn.

OTHER PROTECTION

Should not be necessary under normal conditions of use.

HYGIENE MEASURES

Always wash your hands before eating, smoking or using the toilet.

PERSONAL PROTECTION

See PPE listed above.

SKIN PROTECTION

Cotton or cotton/ synthetic overalls or coveralls are normally suitable. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner.

ENVIRONMENTAL EXPOSURE CONTROLS

See section 12.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Viscous liquid
COLOUR	Range of colours
ODOUR	Characteristic
SOLUBILITY	Immiscible with water
BOILING POINT (°C)	149 - 213
BULK DENSITY	1.319 g/l
VAPOUR DENSITY (air=1)	>4.5
VAPOUR PRESSURE	0.4 kPa @ 15 °C
VISCOSITY	2.5 Pas @ 23 °C
FLASH POINT (°C)	38 Sh CC (Setflash closed cup).
AUTO IGNITION TEMPERATURE (°C)	230 - 270
FLAMMABILITY LIMIT - LOWER(%)	0.6
FLAMMABILITY LIMIT - UPPER(%)	6

10 STABILITY AND REACTIVITY

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 4 of 51

Crown Trade Red Oxide Primer

44

STABILITY

Stable under the recommended storage and handling conditions (see section 7).

CONDITIONS TO AVOID

Protect from frost, heat and sunlight.

MATERIALS TO AVOID

Keep away from oxidising agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

HAZARDOUS DECOMPOSITION PRODUCTS

In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced.

11 TOXICOLOGICAL INFORMATION

GENERAL INFORMATION

Exposure to organic solvent vapours in excess of the stated workplace exposure limit may result in adverse effects on the liver renal and central nervous systems.

INHALATION

Exposure through inhalation may result in the following effects: headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

INGESTION

Ingestion may result in the following effects: sore throat, abdominal pain, drowsiness, nausea, vomiting and diarrhoea. Other effects may be described as for exposure to vapours.

SKIN CONTACT

Solvents may cause the above effects by exposure through the skin. Repeated or prolonged contact with the product may lead to removal of natural fats from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

EYE CONTACT

Splashes in the eyes may cause irritation and reversible local damage.

HEALTH WARNINGS

At elevated temperature, may release 2-butanone oxime/ ethyl methyl ketoxime, which is classified as a category 3 carcinogen and as a skin sensitiser.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

These products have been assessed following the conventional method and are not classified as dangerous for the environment but contain substances dangerous for the environment. See section 3 for details. The product should not be allowed to enter drains or watercourses or be deposited where it can affect ground or surface waters. The Air Pollution Control requirements of regulations made under the Environmental Protection Act may apply to the use of this product.

13 DISPOSAL CONSIDERATIONS

GENERAL INFORMATION

When this coating, in its liquid state, as supplied or skinned, becomes a waste, it is categorised as hazardous waste, with code 08 01 11 (list of wastes). Part used containers, not drained and/ or rigorously scraped out and containing dried residues of the supplied coating, are categorised as non-hazardous waste, with code 08 01 12 (list of wastes). Used containers, drained and/ or rigorously scraped out and containing dried residues of the supplied coating, are categorised as non-hazardous waste, with code 15 01 02 or 15 01 04 (list of wastes). If mixed with other wastes, the above waste code may not be applicable.

DISPOSAL METHODS

Do not allow into drains or water courses or dispose of where ground or surface waters may be affected.

14 TRANSPORT INFORMATION



PROPER SHIPPING NAME

ENVIRONMENTALLY
HAZARDOUS
SUBSTANCE/MARINE
POLLUTANT

UN NO. ROAD
ADR CLASS NO.

ADR CLASS

PAINT

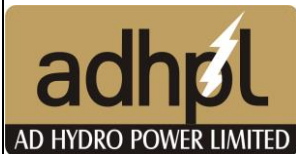
No.

1263

3

Class 3: Flammable liquids.

Date:22.09.2021		Revision - 03	Page 5 of 51
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59

Crown Trade Red Oxide Primer

ADR PACK GROUP	III
TUNNEL RESTRICTION CODE	(D/E)
HAZARD No. (ADR)	30
ADR LABEL NO.	3
HAZCHEM CODE	+3YE
UN NO. SEA	1263
IMDG CLASS	3
IMDG PACK GR.	III
EMS	F-E, S-E
UN NO. AIR	1263
AIR CLASS	3
AIR PACK GR.	III

15 REGULATORY INFORMATION

RISK PHRASES	
R10	Flammable.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.
SAFETY PHRASES	
S2	Keep out of the reach of children.
S37	Wear suitable gloves.
S46	If swallowed, seek medical advice immediately and show this container or label.
S51	Use only in well-ventilated areas.
S56	Dispose of this material and its container to hazardous or special waste collection point.
P14	Contains ETHYL METHYL KETOXIME, Neodecanoic acid, cobalt salt. May produce an allergic reaction.

UK REGULATORY REFERENCES

The products are classified and supplied in accordance with the Chemicals (Hazard Information Packaging for supply) regulations (CHIP). The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks as required by other health and safety legislation. The provision of the Health and Safety at Work Act and the Control of Substances Hazardous to Health regulations apply to the use of this product at work.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC, Dangerous Preparations Directive 1999/45/EC, Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. Classification, labelling and packaging of substances and mixtures 1272/2008EC

APPROVED CODE OF PRACTICE

Approved classification and labelling guide (Sixth edition) The compilation of safety data sheets (Third edition)

GUIDANCE NOTES

Workplace Exposure Limits EH40, Storage of Flammable Liquids in Containers, HS(G)51 Storage of Packaged Dangerous Substances, HS(G)71

NATIONAL REGULATIONS

The Control Of Substances Hazardous to Health regulations (as amended) The Manual Handling Operations regulations (as amended) The Environmental Protection (Duty of Care) regulations (as amended) The Chemicals (Hazard Information and Packaging) for supply regulations (as amended) The Health and Safety at Work act 1974 (as amended)

16 OTHER INFORMATION

GENERAL INFORMATION

The information contained in this safety data sheet is provided in accordance with the requirements of the regulations. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instruction. As the specific conditions of use of the product are outside the suppliers control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

REVISION COMMENTS

This information is provided in a revised format to that previously produced.

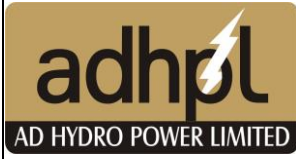
ISSUED BY

Product SHE Information Manager

REVISION DATE

02/02/2011

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 6 of 51



Crown Trade Red Oxide Primer

67

SDS NO.

Revision 10

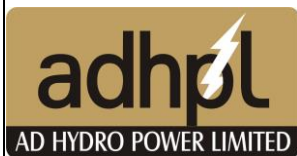
RISK PHRASES IN FULL

- R10 Flammable.
- R20/21 Harmful by inhalation and in contact with skin.
- R22 Harmful if swallowed.
- R21 Harmful in contact with skin.
- R65 Harmful: may cause lung damage if swallowed.
- R38 Irritating to skin.
- R40 Limited evidence of a carcinogenic effect.
- R43 May cause sensitisation by skin contact.
- R66 Repeated exposure may cause skin dryness or cracking.
- R41 Risk of serious damage to eyes.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R67 Vapours may cause drowsiness and dizziness.

DISCLAIMER

The information provided in this safety data sheet is based on the present state of knowledge and current national legislation. It provides guidance on health and safety and environmental aspects and should not be construed as any guarantee of technical performance or suitability for particular applications.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 7 of 51



MATERIAL SAFETY DATA SHEET
Paint Thinner

13

HEALTH	*	1
FLAMMABILITY		2
PHYSICAL HAZ.		0
PPE		C



Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008
Date Created: 11/09/2005

1. Product and Company Identification

Product Code: 1677.8
Product Name: Paint Thinner
Manufacturer Information
Company Name: W. M. Barr
 2105 Channel Avenue
 Memphis, TN 38113
 (901)775-0100
Phone Number:
Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892
Web site address: www.wmbarr.com
Preparer Name: W.M. Barr and Company, Inc. (901)775-0100

onyms

CKPT94402, DKPT94403, EKPT94401, GKPT94002, GKPT94002P, GKPT94400, GPT1KS, QKPT94003, QKPT94203, QPT1KS, QPT720, QKPC94001, GKPT94002L, QKPC94001L, QKPT94003L

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TWA	ACGIH STEL
1. Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits)	8052-41-3	95.0 -100.0 %	500 ppm	100 ppm	250 ppm

3. Hazards Identification

Emergency Overview

Caution! Combustible. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause fire. Vapors may travel long distances to other areas and rooms away from work site. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until all vapors are gone from work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic)

Inhalation Acute Exposure Effects:

May cause dizziness; headache; watering of eyes; eye irritation; weakness; nausea; muscle twitches, and depression of central nervous system. Severe overexposure may cause convulsions; unconsciousness; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.

Skin Contact Acute Exposure Effects:

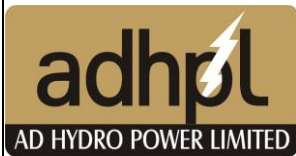
May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation.

Eye Contact Acute Exposure Effects:

This material is an eye irritant. May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the eye. Vapors may irritate eyes.

Ingestion Acute Exposure Effects:

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 8 of 51



MATERIAL SAFETY DATA SHEET
Paint Thinner

Page: 2 **23**
Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008

Harmful or fatal if swallowed. May cause nausea; weakness; muscle twitches; gastrointestinal irritation; and diarrhea. Severe overexposure may cause convulsions; unconsciousness; and death.

Chronic Exposure Effects:

Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. May cause jaundice; bone marrow damage; liver damage; anemia; and skin irritation.

Signs and Symptoms Of Exposure

Inhalation, ingestion, and dermal are possible routes of exposure.

Medical Conditions Generally Aggravated By Exposure

Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:

If user experiences breathing difficulty, move to air free of vapors, Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:

Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:

Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:

Do not induce vomiting. Call your local poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.

Note to Physician

Call your local poison control center for further information.

Inhalation: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation as required.

Ingestion: If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

5. Fire Fighting Measures

Flammability Classification:

Flash Pt:

Explosive Limits:

Autoignition Pt:

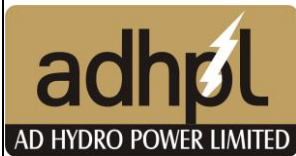
Class II

>= 101.00 F Method Used: Setafash Closed Cup (Rapid Setafash)

LEL: ~ 0.5 % UEL: ~ 6 %

446.00 F

For issue	Dr. Deepak Iikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-U&M	U P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 9 of 51



MATERIAL SAFETY DATA SHEET
Paint Thinner

Page: 3
Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008

3B

Fire Fighting Instructions

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards

Combustible Liquid.

Hazardous Combustion Products

Carbon dioxide, carbon monoxide, smoke, fumes, and/or unburned hydrocarbons.

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

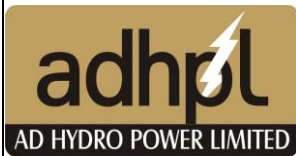
Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters, and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always use proper bonding and grounding procedures.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 10 of 51



MATERIAL SAFETY DATA SHEET
Paint Thinner

Page: 4
Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008

4B

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Engineering Controls (Ventilation etc.)

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

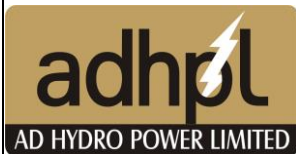
Work/Hygienic/Maintenance Practices

A source of clean water should be available in the work area for flushing eyes and skin.
Do not eat, drink, or smoke in the work area.
Wash hands thoroughly after use.

9. Physical and Chemical Properties

Physical States:	[] Gas [X] Liquid [] Solid
Melting Point:	No data.
Boiling Point:	298.00 F - 400.00 F
Autoignition Pt:	446.00 F
Flash Pt:	>= 101.00 F Method Used: Setafash Closed Cup (Rapid Setafash)
Explosive Limits:	LEL: ~ 0.5 % UEL: ~ 6 %
Specific Gravity (Water = 1):	0.78
Vapor Pressure (vs. Air or mm Hg):	0.22 MM HG at 68.0 F
Vapor Density (vs. Air = 1):	4.7
Evaporation Rate (vs Butyl Acetate=1):	No data.
Solubility in Water:	No data.
Solubility Notes	Very slightly soluble in cold water.
Percent Volatile:	100.0 % by weight.
VOC / Volume:	784.0000 G/L
Corrosion Rate:	No data.
pH:	No data.
Appearance and Odor	Water White / Free and Clear

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 11 of 51



MATERIAL SAFETY DATA SHEET
Paint Thinner

Page: 5
Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008

53

10. Stability and Reactivity

Stability:
Conditions To Avoid - Instability
No data available.

Unstable [] Stable [X]

Incompatibility - Materials To Avoid

Incompatible with strong acids, alkalies, and oxidizers such as liquid chlorine and oxygen.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will occur [] Will not occur [X]

Conditions To Avoid - Hazardous Polymerization

No data available.

11. Toxicological Information

No data available.

Carcinogenicity/Other Information

No data available.

Hazardous Components (Chemical Name)
Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits)

CAS #	NTP	IARC	ACGIH	OSHA
8052-41-3	n.a.	n.a.	n.a.	n.a.

12. Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with federal, state, and local regulations.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name Paint Related Material, Not Regulated

Additional Transport Information

For D.O.T. information, contact W.M. Barr Technical Services at 1-800-398-3892.

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. Regulatory Information

US EPA SARA Title III

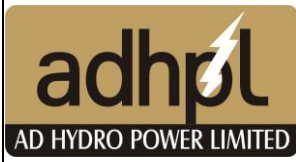
Hazardous Components (Chemical Name)
1. Stoddard solvent (Mineral spirits; Aliphatic Petroleum Distillates; White spirits)

CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
8052-41-3	No	No	No	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 12 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

MATERIAL SAFETY DATA SHEET
Paint Thinner

Page: 6
Printed: 12/31/2008
Revision: 11/13/2008
Supersedes Revision: 09/25/2008

63

Sec.110:

EPA SARA 110 Superfund Site Priority Contaminant List

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

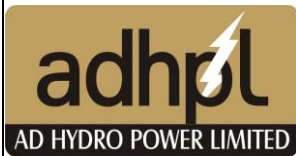
- Yes No Acute (immediate) Health Hazard
- Yes No Chronic (delayed) Health Hazard
- Yes No Fire Hazard
- Yes No Sudden Release of Pressure Hazard
- Yes No Reactive Hazard

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

Date:22.09.2021		Revision - 03	Page 13 of 51
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AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
 Title: Emergency Action Plan

IC



Rosco Laboratories Inc.
 52 Harbor View Avenue
 Stamford, CT, USA, 06902
 Phone: (203) 708 8900

FLUORESCENT PAINT

MSDS No.: 5770, 5780 Series

MSDS Preparation Date: January 8, 2010

Page 1 of 12

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name : **FLUORESCENT PAINT**

Fluorescent - White (No. 5779) — 12 @ 100
 Fluorescent - Red (No. 5780) — 20
 Fluorescent - Yellow (No. 5782) — 20
 Fluorescent - Green (No. 5783) — 82
 Fluorescent - Blue (No. 5784) — 00
 Fluorescent - Invisible Blue (No. 5785) — 00
 Fluorescent - Pink (No. 5786) — 00
 Fluorescent - Gold (No. 5787) — 00

Product Use : Paint
Chemical Family : Mixture

Supplier's name and address:
Rosco Laboratories Inc.
 52 Harbor View Avenue
 Stamford, CT, United States
 06902

24 Hr. Emergency Tel # : (800) 424-9300

HMIS Rating : ★ - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: 1 **Flammability:** 0 **Reactivity:** 0

WHMIS Classes:



SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (weight)	ACGIH TLV		OSHA PEL	
			TWA	STEL	PEL	STEL
None reported	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

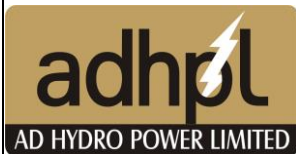
Clear liquid. Invisible Blue, No. 5785: Milky, white liquid. May cause skin and eye irritation. No special hazards exist with this product. As with any chemical substance, caution and care will prevent unnecessary accidents and safety problems. Read instructions on label before use.

POTENTIAL HEALTH EFFECTS

Target organs : None reported by the manufacturer.
Routes of exposure : *Inhalation:* YES *Skin Absorption:* YES *Skin & Eyes:* YES *Ingestion:* YES

Potential acute health effects :
Eyes: Causes eye irritation. May cause conjunctivitis, irritation, and inflammation of mucous membranes. May cause burning sensation, redness and tearing (watering). Possible severe irritation.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor – VP-O&M	O P Ajmera – Director & CEO
Date: 22.09.2021		Revision - 03	Page 14 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan



Rosco Laboratories Inc.
52 Harbor View Avenue
Stamford, CT, USA, 06902
Phone: (203) 708 8900

FLUORESCENT PAINT

MSDS No.: 5770, 5780 Series

MSDS Preparation Date: January 8, 2010

Page 2 of 12

- Skin:** Irritating to skin. Possible irritation, defatting or dermatitis (rash). Components of the product may be absorbed into the body through the skin. May cause central nervous system depression.
- Inhalation:** Can cause irritation of the respiratory tract. Prolonged exposure to vapors may be harmful to health. If higher concentrations are inhaled, additional symptoms may include coughing, shortness of breath, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause mucous membrane irritation. Other adverse effects: Asphyxia. Severe lung irritation or lung damage, loss of appetite. Sanding and grinding dusts may be harmful if inhaled. Contains particles which may cause lung damage if inhaled in large quantities.
- Ingestion:** Lung aspiration hazard. This product may be aspirated (inhaled) into the lungs during ingestion. May cause lung inflammation. May cause mucous membrane irritation. Ingestion may cause symptoms similar to inhalation. May cause gastrointestinal irritation. Gastrointestinal irritation may include abdominal pain, nausea, diarrhea and vomiting. Other adverse effects: intoxication.

Potential chronic health effects

: Prolonged skin contact may defat the skin and produce dermatitis. Harmful by skin absorption. May cause central nervous system depression. Prolonged inhalation of vapors may cause lung damage, including chronic bronchitis.

Medical conditions aggravated by overexposure

: None expected, when used as intended.

Additional health hazards

: None reported by the manufacturer.

Potential environmental effects

: None reported by the manufacturer.

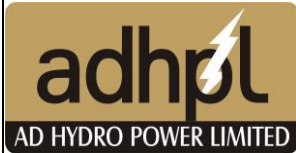
SECTION 4 - FIRST AID MEASURES

- Inhalation** : If breathed in, move person into fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact** : Flush with plenty of water. Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. If irritation persists, seek prompt medical attention.
- Eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Ingestion** : Call a physician or Poison Control Centre immediately. Do NOT induce vomiting. Guard against aspiration into lungs by having the individual turn on their left side.
- Notes For Physician** : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

- Fire hazards/conditions of flammability** : Not flammable under normal conditions of handling. This product will not burn, due to its water content.
- Flammability classification (OSHA 29 CFR 1910.1200)** : OSHA Combustible Liquid IIIB.
- Flash point** : Not available.
- Flash point Method** : Not applicable.
- Lower flammable limit (% by vol.)** : Not applicable.
- Auto-ignition temperature** : Not available.
- Upper flammable limit (% by vol.)** : Not applicable.
- Suitable extinguishing media** : Dry chemical, foam, carbon dioxide and water fog.
- Explosion data: Sensitivity to mechanical impact / static discharge** : Not expected to be sensitive to mechanical impact or static discharge.
- Special fire-fighting procedures/equipment** : Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing. Water may be ineffective on fire, but may be helpful in cooling unburned containers. Do not use a solid water stream as it may scatter and spread fire. If water is used, fog nozzles are preferable.
- Hazardous combustion products** : Oxides of carbon, nitrogen, and sulphur. Oxygen. Acrid fumes, toxic gases.
- Oxidizing properties** : None reported by the manufacturer.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 15 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

3C



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FLUORESCENT PAINT

MSDS No.:5770, 5780 Series

MSDS Preparation Date: January 8, 2010

Page 3 of 12

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Avoid breathing vapors. Wear resistant clothing and boots.
- Environmental precautions** : Prevent product from entering drains, sewers, waterways and soil.
- Spill response/cleanup** : Eliminate all ignition sources if safe to do so. Ventilate area of release. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).
- Containment** : Should not be released into the environment. Recover free liquid or cover with inert absorbent material and place into appropriate container for disposal.

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with skin and eyes. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Avoid breathing of dust created by cutting, sanding, or grinding. Sanding and grinding dusts may be harmful if inhaled. Do not re-use empty containers. Do not puncture container. Keep in properly labeled containers. Containers should be grounded when pouring. Wear suitable protective equipment. Do not ingest. Keep out of direct sunlight.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Do not freeze. Keep container tightly closed when not in use. Store in upright position only. Keep out of the reach of children. Empty product containers may contain hazardous product residue. Store out of direct sunlight.
- Incompatible materials** : Oxidizing agents. Acids and bases. Aluminum. Ammonium salts. Other: magnesium, chlorinated rubber.
- Special packaging materials** : Liquid-proof glass, plastic or non-corrodible metal containers are recommended.

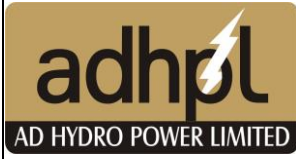
SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Ventilation and engineering measures** : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Use explosion-proof equipment. Discharge exhaust only in area away from ignition sources.
- Respiratory protection** : Use NIOSH/MSHA approved full-face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.
- Skin protection** : Wear impervious gloves, such as neoprene or nitrile rubber.
- Eye / face protection** : Safety glasses with side-shields or chemical splash goggles.
- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Depending on conditions of use, safety shoes and additional protective clothing may also be necessary.
- General hygiene considerations** : Wash hands thoroughly after using this product, and before eating, drinking or smoking. Wash hands before breaks and at the end of workday.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

- | | | | |
|-----------------------|------------------|-----------------------|--|
| Physical state | : Liquid. | Appearance | : Clear liquid.
Milky, white liquid. (Invisible Blue, No. 5785) |
| Odor | : Not available. | Odor threshold | : Not available. |
| pH | : Not available. | | |

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 16 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

4C



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MSDS No.: 5770, 5780 Series
Page 4 of 12

FLUORESCENT PAINT

MSDS Preparation Date: January 8, 2010

Boiling point : 100 °C
Melting/Freezing point : Not available.

Vapor pressure (mmHg @ 20° C / 68° F) : 1.0 - 760
Vapor density (Air = 1) : Heavier than air.

Volatile organic Compounds (VOC's) (lbs/gal;g/l)
: 0.46 / 55.48 (No.5779)
: 0.68 / 82.18 (No.5780)
: 0.76 / 91.92 (No.5782)
: 0.68 / 82.07 (No.5783)
: 0.70 / 84.34 (No.5784)
: 0.69 / 83.61 (No.5785)
: 0.61 / 73.87 (No.5786)
: 0.68 / 81.97 (No.5787)

Viscosity : Not available.

Special Remarks On Fire Hazards

: Not flammable under normal conditions of use. This product will not burn, due to its water content. May spatter if the temperature exceeds the boiling point. Vapors may irritate eyes. May irritate skin.

Specific gravity : 1.0 - 1.3

Coefficient of water/oil distribution : Not available.

Solubility in water : soluble

Evaporation rate (n-Butyl acetate = 1) : Slower than n-butyl acetate

Volatiles (% by weight) : 49.19 (No. 5779)
: 48.13 (No. 5780, 5782-5784)
: 71.2 (No. 5785)
: 71.8 (No. 5786, 5787)

SECTION 10 - REACTIVITY AND STABILITY DATA

Stability and reactivity : Stable under normal conditions.
Hazardous polymerization : Will not occur.
Conditions to avoid : High temperatures. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Oxidizing agents. Do not freeze.
Materials To Avoid And Incompatibility : See Section 7 (Handling and Storage) section for further details.
Hazardous decomposition products : See hazardous combustion products.

SECTION 11 - TOXICOLOGICAL INFORMATION

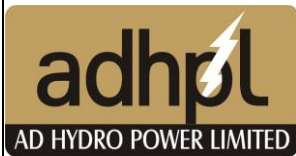
Ingredients	LC50(4hr) inh. rat	LD50	
		oral	dermal
None reported	N/Av	N/Av	N/Av

Toxicological data : Low order of toxicity for normal industrial handling.
Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects : Not expected to have other reproductive effects.
Teratogenicity : Not expected to be a teratogen.
Mutagenicity : Not expected to be mutagenic in humans.
Reproductive Effects : Not expected to have other reproductive effects.
Irritancy : Irritating to eyes, respiratory system and skin.
Sensitization to material : Not expected to be a sensitizer.
Synergistic materials : None reported by the manufacturer.

SECTION 12 - ECOLOGICAL INFORMATION

Environmental effects : None known or reported by the manufacturer.
Important environmental characteristics : None known or reported by the manufacturer.
Ecotoxicological : No data is available on the product itself.

For Issue	Dr. Deepak Khoo - Sr. Manager EHS&S	Ranjay Kapoor - Sr. Chemist	Dr. Ajmera - Director & CEO
Date:22.09.2021		Revision - 03	Page 17 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
 Title: Emergency Action Plan

5C



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FLUORESCENT PAINT

MSDS No.:5770, 5780 Series
 Page 5 of 12

MSDS Preparation Date: January 8, 2010

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : See Section 7 (Handling and Storage) section for further details.
Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules. Do not puncture or incinerate. Contact waste disposal services.

SECTION 14 - TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	None	Not regulated.	Not regulated	-None-	
TDG Additional Information	None.				
49CFR/DOT	None	Not regulated.	Not regulated	-None-	
49CFR/DOT Additional Information	None.				
ICAO/IATA	None	Not regulated.	Not regulated	-None-	
ICAO/IATA Additional Information	None.				
IMDG	None	Not regulated.	Not regulated	-None-	
IMDG Additional Information	None.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

All ingredients are listed on the TSCA Inventory, or are exempted materials.
 SARA Section 313: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical Constituents above de minimus concentrations.

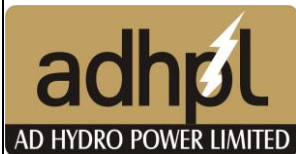
US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Canadian Regulations:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).
 Canadian WHMIS Classification: D2B.
 This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 18 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
 Title: Emergency Action Plan

60



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FLUORESCENT PAINT



MSDS Preparation Date: January 8, 2010

MSDS No.: 5770, 5780 Series

Page 6 of 12

SECTION 16 - OTHER INFORMATION

- Legend**
- : ACGIH: American Conference of Governmental Industrial Hygienists
 - IARC: International Agency for Research on Cancer
 - N/Ap: not applicable
 - N/Av: not available
 - NIOSH: National Institute of Occupational Safety and Health
 - NTP: National Toxicology Program
 - OSHA: Occupational Safety and Health Administration
- References**
- : Information obtained from sources including original supplier's Material Safety Data Sheet, and references including RTECS and CCOHS Cheminfo.

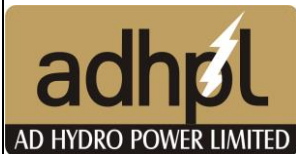
<p>Prepared for: Rosco Laboratories Inc. 52 Harbor View Avenue Stamford, CT, USA, 06902 Phone: (203) 708 8900 http://www.rosco.com/</p>	
<p>Prepared by: ICC The Compliance Center Inc. Canada: 1-888-977-4834 USA: 1-888-442-9628 http://www.thecompliancecenter.com</p>	

DISCLAIMER OF LIABILITY

Every effort has been made to ensure that the safety information on this sheet is accurate, but because Rosco Laboratories, Inc. has no control over the conditions under which the product will be used, liability is limited exclusively to replacement or refund of the purchase price of this product. Except as stated herein, there are no express or implied warranties, including implied warranties of merchantability or fitness for a particular purpose. Rosco Laboratories, Inc. assumes no liability for injury or incidental or consequential damages arising out of storage, handling or use of this product.

Preparation Date: January 8, 2010

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 19 of 51



7c



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FLUORESCENT PAINT

MSDS No.:5781
Page 7 of 12

MSDS Preparation Date: January 8, 2010

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name : **FLUORESCENT PAINT**
Fluorescent Paint - Orange — 8 liter

Product Use : Paint

Chemical Family : Mixture

Supplier's name and address:
Rosco Laboratories Inc.
52 Harbor View Avenue
Stamford, CT, United States
06902

24 Hr. Emergency Tel # : (800) 424-9300

HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: * 2 Flammability: 0 Reactivity: 0

WHMIS Classes:



TOXIC

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (weight)	ACGIH TLV		OSHA PEL	
			TWA	STEL	PEL	STEL
Formaldehyde	50-00-0	0.1 - 1.0	N/Av	N/Av	N/Av	N/Av

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear liquid. Pungent odor. Causes skin and eye irritation. Harmful if inhaled or swallowed Possible sensitizer. Contains material which can cause cancer.

*****POTENTIAL HEALTH EFFECTS*****

Target organs : None reported by the manufacturer.

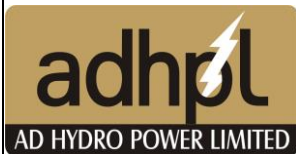
Routes of exposure : Inhalation: YES Skin Absorption: YES Skin & Eyes: YES Ingestion: YES

Potential acute health effects :

Eyes: Causes eye irritation. Prolonged or repeated exposure may be harmful to health. May cause conjunctivitis, irritation, and inflammation of mucous membranes. May cause burning sensation, redness and tearing (watering). Possible severe irritation. Contains materials corrosive or severely irritating to the eyes. Temporary vision impairment (cloudy or blurred vision) is possible. Severe irritation, tissue damage, and possible blindness will result from direct contact.

Skin: Irritating to skin. May cause mild to moderate skin irritation. Prolonged or repeated exposure may be harmful to health. Possible irritation, defatting or dermatitis (rash). Components of the product may be absorbed into the body through the skin. May cause central nervous system depression.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 20 of 51



8c



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FLUORESCENT PAINT

MSDS No. 5781

Page 8 of 12

MSDS Preparation Date: January 8, 2010

Inhalation: May cause irritation to upper respiratory system. Prolonged exposure to vapors may be harmful to health. If higher concentrations are inhaled, additional symptoms may include coughing, shortness of breath, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause mucous membrane irritation. Other adverse effects: Asphyxia. Severe lung irritation or lung damage, loss of appetite. Sanding and grinding dusts may be harmful if inhaled. Contains particles which may cause lung damage if inhaled in large quantities.

Ingestion: Lung aspiration hazard. This product may be aspirated (inhaled) into the lungs during ingestion. May cause lung inflammation. May cause mucous membrane irritation. Ingestion may cause symptoms similar to inhalation. May cause gastrointestinal irritation. Gastrointestinal irritation may include abdominal pain, nausea, diarrhea and vomiting. Other adverse effects: Intoxication, acidosis. Possible chemical burns to the mouth, throat and upper gastrointestinal tract. May cause liver and kidney damage.

Potential chronic health effects: Prolonged skin contact may defat the skin and produce dermatitis. Harmful by skin absorption. May cause central nervous system depression. Prolonged inhalation of vapors may cause lung damage, including chronic bronchitis. Prolonged exposure may result in neurological dysfunction. May cause skin sensitization. Contact dermatitis can result from prolonged overexposure. Allergic respiratory reactions to these materials are characterized by asthma-like symptoms such as chest tightness, wheezing, shortness of breath and coughing.

Medical conditions aggravated by overexposure: None expected, when used as intended.

Additional health hazards: Formaldehyde is a potential cancer hazard, a skin sensitizer and a respiratory sensitizer.

Potential environmental effects: None reported by the manufacturer.

SECTION 4 - FIRST AID MEASURES

Inhalation: If breathed in, move person into fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.

Skin contact: Flush with plenty of water. Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. If irritation persists, seek prompt medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation persists, seek prompt medical attention.

Ingestion: Call a physician or Poison Control Centre immediately. Do NOT induce vomiting. Guard against aspiration into lungs by having the individual turn on their left side.

Notes For Physician: Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Not flammable under normal conditions of handling. This product will not burn, due to its water content.

Flammability classification (OSHA 29 CFR 1910.1200): OSHA Combustible Liquid IIIB.

Flash point: Not available. **Auto-ignition temperature:** Not available.

Flash point Method: Not applicable. **Upper flammable limit (% by vol.):** Not applicable.

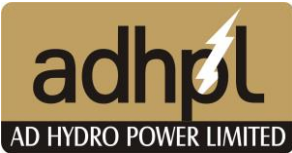
Lower flammable limit (% by vol.): Not applicable.

Suitable extinguishing media: Dry chemical, foam, carbon dioxide and water fog.

Explosion data: Sensitivity to mechanical impact / static discharge: Not expected to be sensitive to mechanical impact or static discharge.

Special fire-fighting procedures/equipment: Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing. Water may be ineffective on fire, but may be helpful in cooling unburned containers. Do not use a solid water stream as it may scatter and spread fire. If water is used, fog nozzles are preferable.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 21 of 51



9c



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Stamford, CT, USA, 06902
Phone: (203) 708 8900

FLUORESCENT PAINT

MSDS Preparation Date: January 8, 2010

MSDS No.: 5781

Page 9 of 12

Hazardous combustion products

: Oxides of carbon, nitrogen, and sulphur. Oxygen. Acrid fumes, toxic gases.

Oxidizing properties

: None reported by the manufacturer.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions

: All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Avoid breathing vapors. Wear resistant clothing and boots.

Environmental precautions

: Prevent product from entering drains, sewers, waterways and soil.

Spill response/cleanup

: Eliminate all ignition sources if safe to do so. Ventilate area of release. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

Containment

: Should not be released into the environment. Recover free liquid or cover with inert absorbent material and place into appropriate container for disposal.

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures

: Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with skin and eyes. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Avoid breathing of dust created by cutting, sanding, or grinding. Sanding and grinding dusts may be harmful if inhaled. Do not re-use empty containers. Do not puncture container. Keep in properly labeled containers. Wear suitable protective equipment. Do not ingest. Keep out of direct sunlight.

Storage requirements

: Store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Do not freeze. Keep container tightly closed when not in use. Store in upright position only. Keep out of the reach of children. Empty product containers may contain hazardous product residue. Store out of direct sunlight.

Incompatible materials

: Oxidizing agents. Acids and bases. Aluminum. Ammonium salts. Other: magnesium, chlorinated rubber.

Special packaging materials

: Liquid-proof glass, plastic or non-corrodible metal containers are recommended.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering measures

: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Use explosion-proof equipment. Use non-sparking equipment. Discharge exhaust only in area away from ignition sources.

Respiratory protection

: Use NIOSH/MSHA approved full-face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

: Gloves impervious to the material are recommended.

Eye / face protection

: Safety glasses with side-shields or chemical splash goggles.

Other protective equipment

: Emergency showers and eyewash facilities should be nearby. Depending on conditions of use, safety shoes and additional protective clothing may also be necessary.

General hygiene considerations

: Wash hands thoroughly after using this product, and before eating, drinking or smoking. Wash hands before breaks and at the end of workday.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state

: Liquid.

Appearance

: Clear liquid.

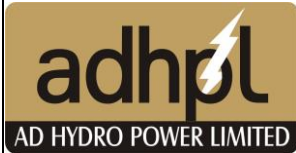
Odor

: Sharp, penetrating odor.

Odor threshold

: Not available.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 22 of 51



100



Rosco Laboratories Inc.
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Phone: (203) 708 8900

FLUORESCENT PAINT

MSDS No.: 5781
Page 10 of 12

MSDS Preparation Date: January 8, 2010

- pH : Not available.
- Boiling point : -19.39 °C
- Melting/Freezing point : Not available.
- Vapor pressure (mmHg @ 20° C / 68° F) : 1.0 - 760
- Vapor density (Air = 1) : Heavier than air.
- Volatile organic Compounds (VOC's) (lbs/gal;g/l) : 0.72 / 86.25
- Viscosity : Not available.
- Special Remarks On Fire Hazards : Not flammable under normal conditions of use. This product will not burn, due to its water content. May spatter if the temperature exceeds the boiling point. Vapors may irritate eyes. May irritate skin.
- Specific gravity : 1.07
- Coefficient of water/oil distribution : Not available.
- Solubility in water : Soluble
- Evaporation rate (n-Butyl acetate = 1) : Slower than n-butyl acetate
- Volatiles (% by weight) : 71.6

SECTION 10 - REACTIVITY AND STABILITY DATA

- Stability and reactivity : Stable under normal conditions.
- Hazardous polymerization : Will not occur.
- Conditions to avoid : High temperatures. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Oxidizing agents. Do not freeze.
- Materials To Avoid And Incompatibility : See Section 7 (Handling and Storage) section for further details.
- Hazardous decomposition products : See hazardous combustion products.

SECTION 11 - TOXICOLOGICAL INFORMATION

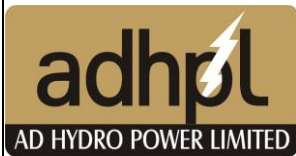
Ingredients	LC50(4hr) inh. rat	LD50	
		oral	dermal
Formaldehyde	308 mg/m3/2H (rat), 250 ppm/2H (rat)	100 mg/kg (rat)	300 mg/kg (rabbit)

- Toxicological data : Low order of toxicity for normal industrial handling.
 - Carcinogenic status : Contains the following chemical(s) classified as ACGIH Group A2 (suspected human carcinogen): formaldehyde.
Contains the following chemical(s) listed as Group 1 (Human Carcinogens) by IARC: formaldehyde.
Contains the following chemical(s) listed as an Anticipated Carcinogen by NTP: formaldehyde.
Contains the following chemical(s) listed as a carcinogen by OSHA: formaldehyde.
 - Reproductive effects : Not expected to have other reproductive effects.
 - Teratogenicity : Not expected to be a teratogen.
 - Mutagenicity : Contains a chemical or chemicals that may be mutagens. This product contains: formaldehyde.
 - Reproductive Effects Irritancy : Not expected to have other reproductive effects.
: Eyes, skin, respiratory system and digestive system. Formaldehyde is an eye and throat irritant and acute toxicant.
 - Sensitization to material : Skin and/or respiratory sensitizer.
 - Synergistic materials : The product contains an ingredient which may enhance the effect of other carcinogens.
This product contains: formaldehyde.
- Components of the product may affect the nervous system.

SECTION 12 - ECOLOGICAL INFORMATION

- Environmental effects : None known or reported by the manufacturer.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 23 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
 Title: Emergency Action Plan

11C



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MSDS No.: 5781

MSDS Preparation Date: January 8, 2010

Page 11 of 12

Important environmental characteristics

- Ecotoxicological : None known or reported by the manufacturer.
- : No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal : See Section 7 (Handling and Storage) section for further details.
- Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules. Do not puncture or incinerate. Contact waste disposal services.

SECTION 14 - TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	None	Not regulated.	Not regulated	-None-	
TDG Additional Information	None.				
49CFR/DOT	None	Not regulated.	Not regulated	-None-	
49CFR/DOT Additional Information	None.				
ICAO/IATA	None	Not regulated.	Not regulated	-None-	
ICAO/IATA Additional Information	None.				
IMDG	None	Not regulated.	Not regulated	-None-	
IMDG Additional Information	None.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

All ingredients are listed on the TSCA Inventory, or are exempted materials.
 SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: formaldehyde.
 CERCLA Reportable Quantity (RQ) (40 CFR 117.302): formaldehyde: 100 lb, 45.4 kg.

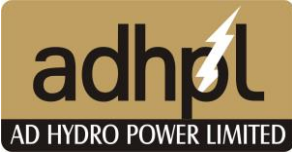
US State Right to Know Laws:

California Proposition 65: This product contains a chemical known to the State of California to cause cancer and/or reproductive harm. This product contains: formaldehyde.

Canadian Regulations:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).
 Canadian WHMIS Classification: D2A, D2B.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date: 22.09.2021		Revision - 03	Page 24 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
 Title: Emergency Action Plan

12c



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FLUORESCENT PAINT

MSDS No.:5781



MSDS Preparation Date: January 8, 2010

Page 12 of 12

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16 - OTHER INFORMATION

- Legend** : ACGIH: American Conference of Governmental Industrial Hygienists
 IARC: International Agency for Research on Cancer
 N/Av: not applicable
 N/Av: not available
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
- References** : Information obtained from sources including original supplier's Material Safety Data Sheet, and references including RTECS and CCOHS Cheminfo.

<p>Prepared for: Rosco Laboratories Inc. 52 Harbor View Avenue Stamford, CT, USA, 06902 Phone: (203) 708 8900 http://www.rosco.com/</p>	
<p>Prepared by: ICC The Compliance Center Inc. Canada: 1-888-977-4834 USA: 1-888-442-9628 http://www.thecompliancecenter.com</p>	

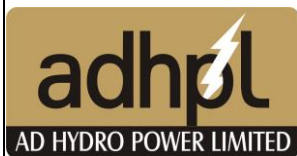
DISCLAIMER OF LIABILITY

Every effort has been made to ensure that the safety information on this sheet is accurate, but because Rosco Laboratories, Inc. has no control over the conditions under which the product will be used, liability is limited exclusively to replacement or refund of the purchase price of this product. Except as stated herein, there are no express or implied warranties, including implied warranties of merchantability or fitness for a particular purpose. Rosco Laboratories, Inc. assumes no liability for injury or incidental or consequential damages arising out of storage, handling or use of this product.

Preparation Date: January 8, 2010

END OF DOCUMENT

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 25 of 51



2310 (11/15) 1D

SERVO® PRODUCT DATA SHEET
SERVOPRIME & LP

IndianOil

GRADES AVAILABLE - SERVO PRIME 32/46/57/68/100/ 32LP/46LP/68LP

DESCRIPTION

Servoprime oils premium quality lubricants especially formulated to give outstanding performance and long life in modern steam, gas and hydraulic turbines. Servoprime oils are manufactured from selectively refined distilled base stocks and contain carefully chosen antioxidant, rust inhibitor and defoamant additives. Servoprime LP oils are special purpose low pour turbine oils.

These oils have been tested for radiation stability and found suitable for use in turbines exposed to radiation encountered in nuclear power plants.

APPLICATION

Servoprime oils are recommended for use in the lubrication system of steam, gas and hydraulic turbines operating under all service conditions. In addition, Servoprime oils give outstanding performance in hydraulic systems, circulating lubrication systems, enclosed bearings and other industrial machines in which long trouble free service of lubricant is required. Servoprime LP oils are meant for low temperature applications such as Rotoflow expanders and Turbo-compressors used in refrigeration applications.

PERFORMANCE BENEFITS

- Provide excellent long term protection against rust and corrosion
- Readily separate from water
- Ensure long service life since they possess outstanding oxidation stability
- Reduced tendency to foam
- Able to release entrained air at a rapid rate

PERFORMANCE STANDARDS

Servoprime oils meet the following specification:

- Turbine oil requirements of BHEL
- BS 489/1983
- GE, USA specification GEK-27070
- IS: 1012 1987-1987 (Reaffirmed)

MANUFACTURERS' APPROVAL

- Bharat Heavy Electricals Ltd., Bhopal
- Bharat Heavy Electricals Ltd., Hardwar

CHARACTERISTICS

ISO VG	32	46	57*	68	100	32LP	46LP	68LP
Kinematic Viscosity, cSt @ 40°C	29-33	43-48	55-60	64-72	95-105	29-33	43-48	64-72
Viscosity Index, Min.	100	98	95	95	95	100	98	95
Flash Point, (COC), °C Min.	200	200	210	210	220	200	200	210
Pour Point, °C Max.	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 30	(-) 30	(-) 30
Neutralisation No. mg KOH/gm	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Rust Test, (D-665 A&B, 24 hrs.)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

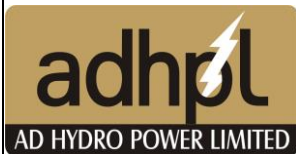
* Non ISO VG

HEALTH & SAFETY

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are maintained.

For further information please contact our nearest office OR:
Technical Services Dept., Indian Oil Corporation Ltd., G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai – 400 051
E-Mail: tservices@indianoil.co.in OR tech_services@indianoil.co.in

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 26 of 51



MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 1 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: Valvoline Premium Blue 15W-40

Company

Valvoline Cummins Ltd.
278, Udyog Vihar, Phase - II
Gurgaon - 122016

Telephone Numbers

Emergency: 91-124 4721200

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	%(by weight)
PARAFFINIC MINERAL OIL	64742-54-7	74.0- 84.0
ENGINE OIL ADDITIVE		8.0- 18.0
ZINC COMPOUNDS		1.0- 6.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

May cause mild eye irritation.

Skin

Prolonged or repeated contact may dry and crack the skin.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects.

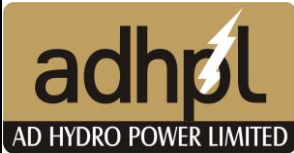
Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways).

Target Organ Effects

No data

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 27 of 51



25

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 2 of 7
Date issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

Developmental Information

There are no data available for assessing risk to the fetus from maternal exposure to this material.

Cancer Information

Used motor oil has been shown to cause skin cancer in laboratory animals continually exposed by repeated applications. Avoid prolonged or repeated skin contact.

Other Health Effects

No data

Primary Route(s) of Entry

Inhalation, Skin contact, Eye contact, Ingestion.

4. FIRST AID MEASURES

Eyes

If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

Skin

First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

Swallowing

First aid is not normally required. If symptoms develop, seek medical attention.

Inhalation

First aid is not normally required. If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention.

Note to Physicians

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin.

5. FIRE FIGHTING MEASURES

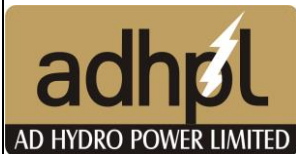
Flash Point

224°C, COC

Explosive Limit

No data

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 28 of 51



3E 6

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 3 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

Autoignition Temperature
No data

Hazardous Products of Combustion
May formaldehydes, alkyl mercaptans, calcium oxide, carbon dioxide and carbon monoxide, hydrogen sulfide, sulfur oxides, various hydrocarbons.

Fire and Explosion Hazards
Dense smoke may be generated while burning.

Extinguishing Media
Regular foam, water fog, carbon dioxide, dry chemical

Fire Fighting Instructions
Water or foam may cause frothing which can be violent and possibly endanger the life of the firefighter. Wear a self-contained breathing apparatus with a full-face piece operated in the positive pressure demand mode with appropriate turnout gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

NFPA Rating
Health - 1, Flammability - 1, Reactivity - 0

6. ACCIDENTAL RELEASE MEASURES

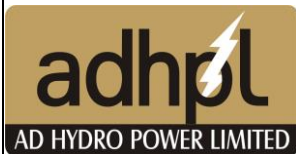
Small Spill
Absorb liquid on vermiculite, floor absorbent or other absorbent material.

Large Spill
Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers.

7. HANDLING AND STORAGE

Handling
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Avoid prolonged or repeated contact.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 29 of 51



4E

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 4 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

Storage

Keep containers closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Not required under normal conditions of use. However, if misting or splashing conditions exist, then safety glasses or chemical splash goggles are advised.

Skin Protection

Not normally required. However, wear resistant gloves such as nitrile rubber to prevent irritation, which may result from, prolonged or repeated skin contact with product.

Respiratory Protections

Not required under normal conditions of use. However, if oil mists are generated above recommended PEL/TLV of 5 mg/m3, then a NIOSH/MSHA approved respirator is advised in absence of proper environmental control. (See your industrial hygienist.)

Engineering Controls

Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below PEL/TLV (s).

Exposure Guidelines Component

PARAFFINIC MINERAL OIL (64742-54-7)
OSHA VPEL 5.000 mg/m3 - TWA
ACGIH TLV 5.000 mg/m3 - TWA

ENGINE OIL ADDITIVE
No exposure limits established

ZINC COMPOUNDS
No exposure limits established

9. PHYSICAL AND CHEMICAL PROPERTIES

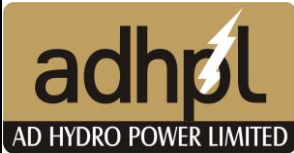
Boiling Point

(for component) > 425.0 F (218.3 C)

Vapor Pressure

No data

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 30 of 51



5E 6

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 5 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

Specific Vapor Density
No data

Specific Gravity
.880 @ 60.00 F

Liquid Density
.880 kg/l @ 15.60 C

Percent Volatiles (Including Water)
No data

Evaporation Rate
No data

Appearance
No data

State
LIQUID

Physical Form
No data

Color
No data

Odor
PETROLEUM

pH
No data

Viscosity
<6700 cP @ 20°C
14.5 - 15.5 cSt @ 100°C

10. STABILITY AND REACTIVITY

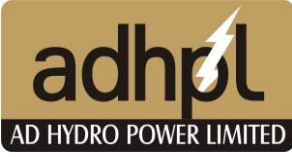
Hazardous Polymerization

Product will not undergo hazardous polymerization.

Hazardous Decomposition

May formaldehydes, alkyl mercaptans, calcium oxide, carbon dioxide and carbon monoxide, hydrogen sulfide, sulfur oxides, various hydrocarbons.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 31 of 51



68 E

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 6 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

Chemical Stability
Stable.

Incompatibility
Avoid contact with: acids, halogenated hydrocarbons, halogens, strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

No data

12. ECOLOGICAL INFORMATION

No data

13. DISPOSAL CONSIDERATION

Waste Management Information
Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:
Not Regulated

Container/Mode:
CASES/SURFACE - NO EXCEPTIONS

NOS Component:
None

RQ (Reportable Quantity) - 49 CFR 172.101
Not applicable

For issue	Dr. Deepak Kapoor - Sr. Manager EMS&S	Pankaj Kapoor - VP-U&M	U P Ajmera - Director & CEO
Date:22.09.2021		Revision - 03	Page 32 of 51

7E C

MATERIAL SAFETY DATA SHEET

VALVOLINE CUMMINS LTD.

Page: 7 of 7
Date Issued: May 28, 2003
No: 043052003

Valvoline Premium Blue 15W-40

15. REGULATORY INFORMATION

CLASSIFICATION

NOT CLASSIFIED	

Composition
R-Phrases
S-Phrases

PETROLEUM PRODUCT
Avoid repeated skin contact
If swallowed, do not bring induce vomiting – seek medical advise
Spare the nature of oil products
Keep out of the reach of children

16. OTHER INFORMATION

Usage and restriction: Lubricant for high-speed diesel engines.

Datasheets are developed on the basis of information given by producers/ suppliers of inputs and the existing regulations for classification and labeling of chemicals.

This product must be used, handled and applied in accordance with the requirements of the equipment manufacturer's manuals, bulletins and other documentation.

17. DISCLAIMER

The information contained in this data sheet is, and to the best of our knowledge, true and accurate, recommendations are based on presently known facts. It is the responsibility of the user in their own interest to ensure that the appropriate recommendations/precautions are adhered to.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 33 of 51

8E 6

Field Alert

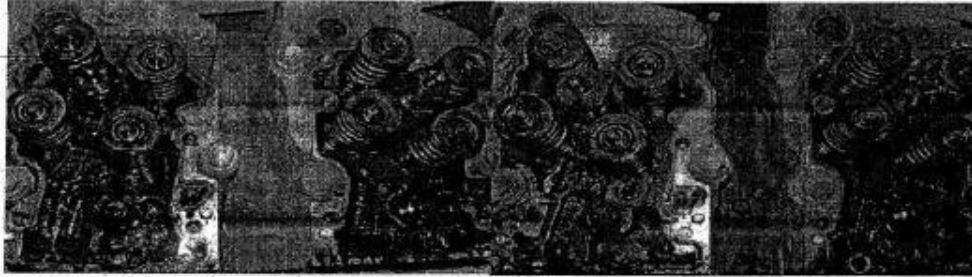
#FA-2011-19-REV00

Family	Subject	Date	Group
CIL Built Engines	Lubricating Oil	09 December 2011	07

Few Catastrophic engine failures were reported on up-rated HHP engines operating in field.

During lube oil analysis, it was revealed, excessive blackening / soot formation in oil when customer used API CF4 –15W40 grade lube oil.

Cummins India Limited has been continuously upgrading the products to incorporate latest technology like low temperature after cooling, two stage turbo charging, electronic engines, air to air charge air cooling and high power to weight ratio etc, which has also developed the tendency of higher soot contents in these engines during internal combustion.

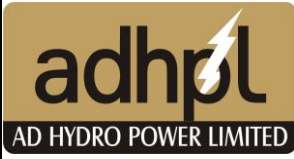


Keeping in mind the above, Cummins India Ltd. has been strongly recommending the usage of **SAE15W40 lubricating oil with API CH4 , CES 20071 & CES20076** classification for all Cummins Diesel engines to get the various advantages and optimum performance from the engine.

SAE15W40 Lubricating oil with API CH4, CES 20071 & CES 20076 classifications is formulated for service of high speed, four stroke cycle diesel engines. This lubricating oil has excellent soot handling capacity resulting into lesser sludge formation in the engine and also has increased control on acidic formation in oil thereby causing lesser effect on bearing and other components due to corrosion.

Page 1 of 2

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 34 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2

Title: Emergency Action Plan

9E

Keeping in mind the above, Cummins India Ltd., has, therefore, made changes in the Operation and maintenance manual with effect from January 2008.

The purpose of this Field Alert is to communicate in the field to recommend customers on using **SAE15W40 lubricating oil with API CH4, CES 20071 & CES20076** classification lubricating oil on all Cummins Diesel engines.

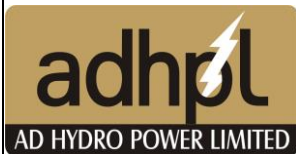
Note: This communication is a field alert only and not subject to campaign.

CUMMINS INDIA LIMITED,
Kothrud, Pune 411 038, India.

Distribution Business Unit
35A/1/2, Erandawane, Pune – 411 038, India.

Page 2 of 2

<i>For issue</i>	<i>Dr. Deepak Tikoo – Sr. Manager EHS&S</i>	<i>Pankaj Kapoor –VP-O&M</i>	<i>O P Ajmera – Director & CEO</i>
Date:22.09.2021		Revision - 03	Page 35 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan



INDIAN OIL CORPORATION LTD
MARKETING DIVISION, MUMBAI

MATERIAL SAFETY DATA SHEET

PRODUCT INFORMATION :

Trade Name : Servo Superior 20W-40
Name of Manufacturer : Indian Oil Corporation Ltd.
Chemical Nature/Composition : Mineral oil - 80 %wt
Additive package (Antioxidant, Antiwear, Antifoam, PPD) = 20%
End Use : Automotive Lubricating Oil for Crankcase

HAZARDOUS INGREDIENTS : None

FIRE AND EXPLOSION HAZARDS :

Flash Point, °C, COC : 200 Min
Extinguishing Media : Foam, Dry Chemical Powder, Carbon dioxide
Special Fire Fighting Procedures : To control big fires, exposed containers should be cooled with the help of water. Use protective appliances, Mask, etc.

HEALTH HAZARD DATA :

Acute oral Toxicity (LD-50) : In Rats
Male > 25,000 mg/kg. B.Wt.
Female > 25,000 mg/kg. B.Wt.

Toxicity to fresh water fish (LC-50) : > 5,000 mg/litre

Eye Irritation : May be irritant

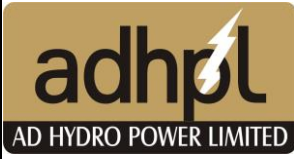
EMERGENCY FIRST AID PROCEDURES :

Eyes : Flush with fresh water for at least 15 Minutes. Seek medical aid.
Skin : Wash with soap and water.
Ingestion : Do not induce vomiting. Give water, liquid paraffin, olive oil or vegetable oil
Inhalation : Remove to fresh air. Seek medical aid.

SPECIAL PROTECTION INFORMATION :

Ventilation : Mechanical ventilation recommended.
Cloves : Neoprene or nitrile rubber gloves recommended.
Goggles : Chemical splash goggles.
Others : Use apron also.

For Issue	Dr. Deepak Khosla - Sr. Manager EHS&S	Pratik Rupani - VP-Operations	Dr. Ajiteta - Director & CEO
Date:22.09.2021		Revision - 03	Page 36 of 51



2F ⊖

Trade Name : Servo Superior 20W-40

Page:2 of 2

ENVIRONMENTAL PROTECTION :

Water disposal method : Disposal should be made in compliance with Federal, State and Local Laws.

Procedure in case of Breakage/Leakage : Wear rubber boots, gloves, apron and goggles. Pick-up free liquid for recycle/disposal. Absorb small amount on inert material like clothes, sand etc.

CHEMICAL AND PHYSICAL PROPERTIES :

Boiling Point, °C : -
 Specific Gravity : 0.89
 Water Solubility : Insoluble
 K. Vis, cSt 100 °C : 13.5 – 15.5
 40 °C : -
 Pour Point °C : (-) 21
 Colour, ASTM : 8.0 Max
 Odour : Slight
 S. Ash, % Wt. : 0.68 – 1.2
 TBN mg KOH/gm : 6 - 8
 TAN mg KOH/gm : -
 Flash Point Deg C(COC) : 200 Min.
 Vapour Density : N.A.
 Evaporation Rate : N.A.
 Vapour pressure kPa : N.A.
 Hazardous Polymerisation : No

The material reacts violently with :

Air	Water	Heat	Strong Oxidizers	Others
No	No	No	may react at high temperatures	-

Date of issue : Feb., 1998

Supersedes Issue of : Nil

Date:22.09.2021		Revision - 03	Page 37 of 51
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19

SAFETY DATA SHEET

1. CHEMICAL IDENTITY

CHEMICAL NAME	Diesel	CHEMICAL CLASSIFICATION	Petroleum Hydrocarbon
SYNONYMS	Gas Oil	TRADE NAME	HSD
FORMULA	Complex mixture of hydrocarbon	C.A.S. No.	NA
U.N.No.	1202	REGULATED IDENTIFICATION	NA
SHIPPING NAME CODES/LABEL	Diesel RED -Flammable liquid	HAZCHEM No.	3Y
HAZARDOUS WASTE I.D. NO.	5		
HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1.	NA	2.	

2. PHYSICAL AND CHEMICAL DATA

BOILING RANGE / POINT °C	150 - 400	PHYSICAL STATE	Liquid
APPEARANCE	Light Brown	MELTING/FREEZING POINT °C	- 46 to 18
VAPOUR PRESSURE @ 38°C, mm/Hg	< 1	ODOUR	Diesel like
VAPOUR DENSITY (AIR = 1)	3 to 5	SOLUBILITY IN WATER @ 30	Insoluble
OTHERS	NA	SPECIFIC GRAVITY -20°C	0.81 - 0.91
PH	NA		

3. FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY	Moderate	LEL %	.7
FLASH POINT °C	32 to 96	AUTO IGNITION TEMPERATURE °C	256.6
TDG FLAMMABILITY	NA	UEL %	5.0
EXPLOSION SENSITIVITY TO IMPACT	NO	EXPLOSION SENSITIVITY TO STATIC ELECTRICITY	Dangerous
HAZARDOUS COMBUSTION PRODUCTS	CO on incomplete combustion may be produced.	HAZARDOUS POLYMERISATION	NO
COMBUSTIBLE LIQUID	YES	EXPLOSIVE MATERIAL	NO
CORROSIVE MATERIAL	NO	FLAMMABLE MATERIAL	YES
OXIDISER	NO	OTHERS	Nil
PYROPHORIC MATERIAL	NO	ORGANIC PEROXIDE	NO

4. REACTIVE DATA

CHEMICAL STABILITY	Stable
INCOMPATIBILITY WITH OTHER MATERIAL	Strong oxidizing agents. Keep away from heat and open flame.
REACTIVITY	No
HAZARDOUS REACTION PRODUCTS	No

26

5. HEALTH HAZARD DATA

ROUTES OF ENTRY	Inhalation, Ingestion and Absorption.		
EFFECTS OF EXPOSURE / SYMPTOMS	INHALATION: Headache, dizziness, difficulty in breathing , loss of consciousness. INGESTION : Causes nausea and vomiting. ABSORPTION: Irritating to skin and eyes.		
EMERGENCY TREATMENT	INHALATION: Remove victim to fresh air, give artificial respiration or oxygen if breathing is labored. INGESTION: Do not induce vomiting, give liquid paraffin or vegetable oil. CONTACT : Remove contaminated cloths , wash effected body parts with plenty of water.		
TLV(ACGIH)	5mg./m ³ (Inhalation)	STEL	10mg./m ³
PERMISSIBLE EXPOSURE LIMIT	NA	ODOUR THRESHOLD	0.1ppm
LD ₅₀			
NEPA HAZARD SIGNALS	HEALTH 0	FLAMMABILITY 2	STABILITY 0
	SPECIAL	NO	

5. PREVENTIVE MEASURES

PERSONNEL PROTECTIVE EQUIPMENT	EYES : Goggles/ face shield. RESPIRATORY : Self contained Breathing apparatus for contaminants/ clean up. HAND : Rubber gloves. Body : Rubber clothing.
--------------------------------	--

7. EMERGENCY AND FIRST AID MEASURE

FIRE	FIRE EXTINGUISHING MEDIA SPECIAL PROCEDURES UNUSUAL HAZARDS	Foam , DCP , CO ₂ , water may be ineffective and cause fire to spread . May be used to cool fire exposed containers. Apply water as far a distance as possible. If leak or spill has not ignited use water spray to disperse vapor and to protect men attempting leak. Water may be used to flush spills away from exposures. Flashback may occur along vapor trail . Vapor may explode if ignited in an enclosed area.
EXPOSURE	FIRST AID MEASURES	INHALATION : Remove the victim to fresh air . Give artificial respiration . Prevent being overcome by high vapor concentration.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 39 of 51

36

	ANTIDOTES/ DOSAGES	INGESTION : Do not induce vomiting. Give water , liquid paraffin, olive oil or some vegetable oil. CONTACT : Remove contaminated cloth and wash affected body parts (skin/eyes) with plenty of water.
SPILLS	STEPS TO BE TAKEN	NA
	WASTE DISPOSAL METHOD	1.Avoid spillage. 2. Naked flame around the surrounding area should be extinguished. 3. Use sand or earth for absorption. 4. Low lying area should be evacuated. The contaminated sand/ earth should be send to safe area.

8. ADDITIONAL INFORMATION / REFERENCES

1. Avoid breathing vapor, keep upwind - Wear appropriate sealed chemical suit.
2. Consider appropriate evacuation.
3. Gastric lavage should be done after endotracheal intubation, in view of the risk of aspiration which can cause chemical pneumonitis for which antibiotic and corticosteroid therapy may be indicated.

9. MANUFACTURER / SUPPLIERS DATA

NAME OF FIRM	INDIAN OIL CORP. LTD.
MAILING ADDRESS	
TELEPHONE/TELEX NO.	
TELEGRAPHIC ADDRESS	
STANDARD PACKING	
CONTACT PERSON IN-EMERGENCY	
LOCAL BODIES INVOLVED	

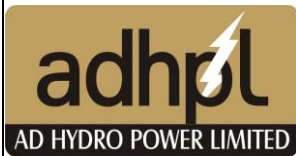
10. DISCLAIMER

Information contained in this material data sheet is believed to be reliable but no representation; guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. For exact specifications current specification-sheet may be referred to. The Indian Oil Corporation makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

11. REFERENCES.

1. FIREFITER'S HAZARDOUS MATERIALS REFERENCE BOOK BY DANIEL J. DAVIS.
2. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS BY N. IRVIN SAX.
3. ENVIRONMENT CANADA , MANUAL OF SPILLS FOR HAZARDOUS MATERIALS.
4. NFPA , FIRE PROTECTION GUIDELINES FOR HAZARDOUS MATERIALS.

NA = Not Available



Material Safety Data Sheet



17

1. Identification of the material and supplier

Product name **Transformer Oil**
 SDS # 461633
 Historic SDS#: CASLA (105306)
 Product use Transformer Oil
 For specific application advice see appropriate Technical Data Sheet or consult our company representative.
 Supplier *P* BP Australia Pty Ltd (ABN 53 004 085 616)
 Melbourne Central,
 360 Elizabeth Street,
 Melbourne,
 Victoria 3000,
 Australia
 Tel: +61 (03) 9268 4111
 Fax: +61 (03) 9268 3321
 EMERGENCY TELEPHONE NUMBER 1800 14 14 74
 OTHER PRODUCT INFORMATION Technical Help Line 1 300 557 998 (Local Call)
 Product code 461633-AU01

2. Hazards Identification

Statement of hazardous/dangerous nature NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/Information on Ingredients

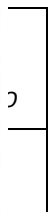
Highly refined base oil
This product does not contain any hazardous ingredients at or above regulated thresholds.

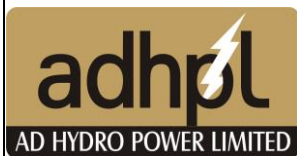
4. First-aid measures

Eye contact In case of contact, immediately flush eyes with a copious amount of water for at least 15 minutes. Get medical attention if irritation occurs.
 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 irritation develops.
 Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms appear.
 Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

5. Fire-fighting measures

Extinguishing Media Suitable In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.
 Hazards from combustion products These products are carbon oxides
 Unusual fire/explosion Hazards This material is not explosive as defined by established regulatory criteria.
 Special fire-fighting procedures None identified.
 Protection of fire-fighters Fire-fighters should wear self-contained positive pressure breathing apparatus (SCBA) and full turnout gear.





27

6 . Accidental release measures

Emergency Procedures Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures").

Methods and materials for containment and clean-up If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spill material with soil and prevent runoff entering surface waterways. See Section 13 for Waste Disposal Information.

7 . Handling and storage

Handling Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area.

Combustibility Classification Combustible liquid Class C1 (AS 1940).

8 . Exposure controls/personal protection

Ingredient name Distillates (petroleum), hydrotreated, light naphthenic (Highly refined mineral oil)

Occupational exposure limits **NOHSC (Australia).**
TWA: 5 mg/m³ 8 hours) Form: Oil mist, mineral

Whilst specific OELs for certain components are included in this SDS, it should be noted that other components of the preparation will be present in any mist, vapour or dust produced. For this reason, the specific OELs may not be applicable to the product and are provided for guidance purposes.

Biological Limit Values No biological limit allocated.

Control Measures Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure 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.

Personal protective equipment

Respiratory system ~~Avoid breathing of vapours, mists or spray.~~ **Select and use respirators in accordance with AS/NZS 1715/1716.** When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist (Type P1) filters. Filter capacity and respirator type depends on exposure level.

Skin and body Avoid prolonged or repeated contact with skin. Wear protective clothing if prolonged or repeated contact is likely.

Hands Wear protective gloves if prolonged or repeated contact is likely: Chemical resistant gloves. Recommended: Nitrile gloves.
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.

Eyes Safety glasses with side shields.

9 . Physical and chemical properties

Physical state Liquid.

Colour Yellow/Pale colour.

Odour Odourless.

Auto-ignition temperature >270 °C

Flash point 145 °C (Open cup) Cleveland.
148 °C (Closed cup) Pensky-Martens.

Pour Point -57 °C

Boiling point / range Not available.

Melting point / range Not available.

Density 889 kg/m³ (0.889 g/cm³) at 15°C

Vapour density Not available.

Vapour pressure Not available.

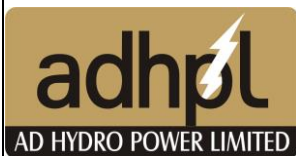
Solubility Insoluble in water. °

Product name Transformer Oil

Product code 461833-AU01

Page: 2/4

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 42 of 51



87

Relative density/Specific Gravity: Not available.
Viscosity: Kinematic: 8 mm²/s (8 cSt) at 40°C

10 . Stability and reactivity

Stability: The product is stable.
Conditions to Avoid: Avoid extreme temperatures, strong oxidizers, fire.
Incompatibility with various substances/Hazardous Reactions: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous polymerization: Will not occur.
Hazardous Decomposition Products: These products are carbon oxides

11 . Toxicological information

Effects and symptoms
Eyes: Unlikely to cause more than transient stinging or redness if accidental eye contact occurs.
Skin: Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Inhalation: Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.
Ingestion: Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause nausea and diarrhoea.
Chronic toxicity
Carcinogenic effects: No component of this product at levels greater than or equal to 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC), the European Commission (EC), or the National Occupational Health and Safety Commission (Australia).

12 . Ecological information

Ecotoxicity: Not classified as environmentally hazardous in accordance with the "Approved Criteria for Classifying Hazardous Substances" (NOHSC (1006)2004 as amended and adapted).
Biodegradability
Persistence/degradability: The biodegradability of this material has not been determined.

13 . Disposal considerations

Disposal Consideration / Waste information: Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.
Special Precautions for Landfill or Incineration: No additional special precautions identified.

14 . Transport information

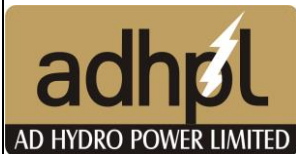
Not classified as dangerous for transport (ADG, IMDG, ICAO/IATA).
Special precautions for user: No known special precautions required. See Section: "Handling and storage" for additional information.

15 . Regulatory Information

Standard for the Uniform Scheduling of Drugs and Poisons: Not regulated.
Control of Scheduled Carcinogenic Substances
Ingredient name: No Listed Substance
Schedule
Other Classification information
Other regulations inventories
Europe inventory: All components are listed or exempted.
United States inventory (TSCA 8b): All components are listed or exempted.
Australia inventory (AICS): All components are listed or exempted.
Canada inventory: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.

Product name Transformer Oil Product code 461633-AU01 Page: 3/4

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 43 of 51



47

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

Key to abbreviations

AMP = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists, an agency that promulgates exposure standards.
ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail
ADG Code = Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number = Chemical Abstracts Service Registry Number
HAZCHEM Code = Emergency action code of numbers and letters which gives information to emergency services. Its use is required by the ADG Code for Dangerous Goods in bulk.
ICAO = International Civil Aviation Organization.
IATA = International Air Transport Association, the organization promulgating rules governing shipment of goods by air.
IMDG = International Maritime Organization Rules; rules governing shipment of goods by water.
IP 346 = A chemical screening assay for dermal toxicity. The European Commission has recommended that Method IP 346 be used as the basis for labelling certain lubricant oil base stocks for carcinogenicity. The EU Commission has stipulated that the classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. (See Note L, European Commission Directive 67/548/EEC as amended and adapted.) DMSO is a solvent.
NOHSC = National Occupational Health & Safety Commission, Australia
TWA = Time weighted average
STEL = Short term exposure limit
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

History

Date of issue 20/07/2007.
Date of previous issue No Previous Validation.
Prepared by Product Stewardship

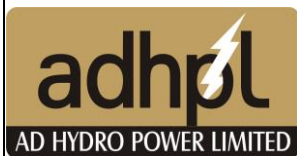
Notice to reader

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.

For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 44 of 51



SERVO® PRODUCT DATA SHEET
SERVOSYSTEM 22 - 150

IndianOil

GRADES AVAILABLE - SERVOSYSTEM 22/32/46/57*/68/81*/100/150

<p>DESCRIPTION Servosystem oils are anti-wear hydraulic and circulation oils specially formulated for efficient lubrication of a wide variety of industrial equipment. Servosystem oils are blended from highly refined base stocks and carefully selected antioxidant, anti-wear, anti-rust and anti-foam additives.</p>	<p>APPLICATION Servosystem oils are recommended as fluid media for hydraulic systems and hydraulic pumps even under severe operating conditions in stationary and mobile equipment. These oils are also recommended for circulation, splash, bath and ring oiling systems of the bearings (both plain and anti-friction) and gears of industrial machinery that require a long life lubricant. These oils can be used for chain drives and compressor crankcase lubrication. They are not suitable for lubrication of turbines and silver or silver coated components in any equipment.</p>
<p>PERFORMANCE BENEFITS Servosystem oils</p> <ul style="list-style-type: none"> • Provide good wear- protection, thereby prolonging service life of moving parts • Possess high film strength properties which help minimise friction and wear • Provide rust-protection, to reduce the incidence of corrosion • Have excellent resistance to oxidation thereby giving long service life • Have reduced tendency to foam thereby minimise the chance of noisy operation and erratic actuator response 	<p>PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> • IS: 10522:1983 (Reaffirmed 1993) <p>MANUFACTURERS APPROVAL</p> <ul style="list-style-type: none"> • Bharat Pumps & Compressors Ltd., Naini • Hindustan Machine Tools Ltd., Bangalore • Kirloskar Bros. Ltd., Pune • Heavy Engg. Corporation, Ranchi • Revathi CP Equipments

CHARACTERISTICS

GRADE	22	32	46	57*	68	81*	100	150
Kinematic Viscosity, cSt @ 40°C	20-24	29-33	43-48	55-60	64-72	78 - 85	95-105	145-155
Viscosity Index, Min	95	95	95	95	95	95	90	90
Flash Point (COC), °C Min.	160	190	200	210	210	210	210	230
Pour Point, °C Max.	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6	(-) 6
Rust Test, (D-665 A&B, 24 hrs.)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

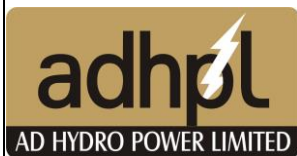
* NON ISO VG

HEALTH & SAFETY

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are maintained.

For further information please contact our nearest office OR:
Technical Services Dept., Indian Oil Corporation Ltd., G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai – 400 051
E-Mail: tsservices@indianoil.co.in OR tech_services@indianoil.co.in

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For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 45 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

SERVO® PRODUCT DATA SHEET **SERVOMESH SP**

IndianOil

GRADES AVAILABLE - SERVO MESH SP 68/100/150/220/257/320/460/680/1000

<p>DESCRIPTION Servomesh SP oils are extreme pressure type industrial gear lubricants. These oils demonstrate improved thermal stability and oxidation resistance over conventional lead-naphthenate oils. They have good demulsibility characteristics, low foaming tendency and provide rust and corrosion protection to metal surfaces.</p>	<p>APPLICATION Servomesh SP oils are recommended for all types of enclosed gear drives with circulation or splash lubrication systems. Servomesh SP oils are particularly recommended for gear sets working under heavy or shock load conditions. These oils can be used in systems involving gears, plain bearings, roller bearings and sliding surfaces. They are also suitable for chain drives, sprockets, flexible couplings, plain and rolling element bearings employing splash, circulation and spray lubrication systems.</p>
<p>PERFORMANCE BENEFITS</p> <ul style="list-style-type: none"> • Have reduced tendency to foam • Provide high load carrying ability • Ensure excellent wear protection • Ensure long service life since they have good oxidation and thermal stability • Minimise the formation of sludge and deposits, even at high bulk oil temperatures • Ensure ready separation from water due to good demulsibility property • Protect metals against rust and corrosion 	<p>PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> • AGMA standard 250.04 • ASLE standard G-315, G-1000, G-1500 and G-2150 • IS: 8406 – 1993 • US Steel requirement No. 222 and 224 <p>Servomesh SP 68, 100, 150, 220, 320 and 460 meet Cincinnati Milacron, USA specification No. P-63, P-76, P-77, P-74, P-59 & P-35 respectively.</p> <p>MANUFACTURERS' APPROVAL Servomesh SP oils are approved by</p> <ul style="list-style-type: none"> • Cincinnati Milacron, USA • David Brown Gear Industries Ltd., UK

CHARACTERISTICS

ISO VG	68	100	150	220	257*	320	460	680	1000
Kin. Vis. cst @ 40°C	64 - 72	95 - 105	145 - 155	210 - 230	250 - 280	320 - 350	420 - 500	615 - 660	980 - 1050
Viscosity Index, Min.	90	90	90	90	90	90	90	90	80
Flash Point (COC), °C Min	204	204	204	232	232	232	232	232	280
Pour Point, °C Max.	(-) 6	(-) 6	(-) 6	(-) 3	(-) 3	(-) 3	(-) 3	(-) 3	(+) 6
FZG Rating, 12th Stage	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

* NON ISO VG

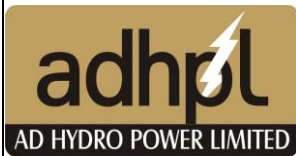
HEALTH & SAFETY

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are maintained.

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E-Mail: tservices@indianoil.co.in OR tech_services@indianoil.co.in

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For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor –VP-O&M	O P Ajmera – Director & CEO
Date:22.09.2021		Revision - 03	Page 46 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

SERVO® PRODUCT DATA SHEET **SERVOMESH SP**

IndianOil

GRADES AVAILABLE - SERVO MESH SP 68/100/150/220/257/320/460/680/1000

DESCRIPTION

Servomesh SP oils are extreme pressure type industrial gear lubricants. These oils demonstrate improved thermal stability and oxidation resistance over conventional lead-naphthenate oils. They have good demulsibility characteristics, low foaming tendency and provide rust and corrosion protection to metal surfaces.

PERFORMANCE BENEFITS

- Have reduced tendency to foam
- Provide high load carrying ability
- Ensure excellent wear protection
- Ensure long service life since they have good oxidation and thermal stability
- Minimise the formation of sludge and deposits, even at high bulk oil temperatures
- Ensure ready separation from water due to good demulsibility property
- Protect metals against rust and corrosion

APPLICATION

Servomesh SP oils are recommended for all types of enclosed gear drives with circulation or splash lubrication systems. Servomesh SP oils are particularly recommended for gear sets working under heavy or shock load conditions. These oils can be used in systems involving gears, plain bearings, roller bearings and sliding surfaces. They are also suitable for chain drives, sprockets, flexible couplings, plain and rolling element bearings employing splash, circulation and spray lubrication systems.

PERFORMANCE STANDARDS

- AGMA standard 250.04
 - ASLE standard G-315, G-1000, G-1500 and G-2150
 - IS: 8406 – 1993
 - US Steel requirement No. 222 and 224
- Servomesh SP 68, 100, 150, 220, 320 and 460 meet Cincinnati Milacron, USA specification No. P-63, P-76, P-77, P-74, P-59 & P-35 respectively.

MANUFACTURERS' APPROVAL

- Servomesh SP oils are approved by
- Cincinnati Milacron, USA
 - David Brown Gear Industries Ltd., UK

CHARACTERISTICS

ISO VG	68	100	150	220	257*	320	460	680	1000
Kin. Vis. cst @ 40°C	64 - 72	95 - 105	145 - 155	210 - 230	250 - 280	320 - 350	420 - 500	615 - 660	980 - 1050
Viscosity Index, Min.	90	90	90	90	90	90	90	90	80
Flash Point (COC), °C Min	204	204	204	232	232	232	232	232	280
Pour Point, °C Max.	(-) 6	(-) 6	(-) 6	(-) 3	(-) 3	(-) 3	(-) 3	(-) 3	(+) 6
FZG Rating, 12th Stage	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

* NON ISO VG

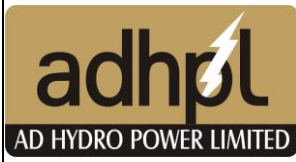
HEALTH & SAFETY

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are maintained.

For further information please contact our nearest office OR:

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E-Mail: tservices@indianoil.co.in OR tech_services@indianoil.co.in

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For issue	Dr. Deepak Tikoo – Sr. Manager EHS&S	Pankaj Kapoor – VP-O&M	O P Ajmera – Director & CEO
Date: 22.09.2021		Revision - 03	Page 47 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

SERVO[®] PRODUCT DATA SHEET SERVO GEAR HP



GRADES AVAILABLE - SERVO GEAR HP 80W, HP 80, HP 85W, HP 85, HP 90, HP 140

DESCRIPTION

Servo Gear HP oils are extreme pressure automotive gear lubricants. These oils are blended from selected base stocks and contain additives to provide extreme pressure, anti-rust-corrosion characteristics

APPLICATION

Servo Gear HP oils are recommended for passenger car, bus and highway truck hypoid, spiral bevel and worm gear axles and also manual transmission for which an extreme pressure gear lubricant of this type is required. Servo Gear HP 80 is specially designed for power transmission units of vehicles operating at sub-zero temperatures.

PERFORMANCE BENEFITS

- Servo Gear HP oils
- Satisfy the lubrication requirements of a wide variety of gears.
 - Provide protection against wear, due to good EP characteristics
 - Give long service life even under high temperature operation since it has excellent oxidation stability
 - Provide good protection against corrosion

PERFORMANCE STANDARDS

- Servo Gear HP oils meets:
- API Service GL 4
 - IS: 1118-1957 (Reaffirmed 1993)
 - UK Defence CS 3000A
 - US military MIL-L-2105

APPROVAL

- Bharat Earth Movers Ltd., Bangalore
- Escorts Ltd., Faridabad
- Hindustan Motors Ltd., Kolkata/Hoogly
- Kirloskar Tractors Ltd., Nasik
- Mahindra & Mahindra Ltd., Mumbai
- URAL India Ltd

CHARACTERISTICS

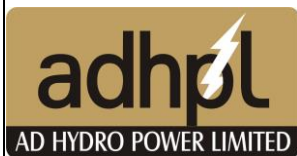
SAE GRADE	HP 80W	HP 80	HP 85W	HP 85	HP 90	HP 140
Kinematic Viscosity cSt @ 100°C	8-10	9-11	11-12	11.5-13	16-18	28-34
Viscosity Index, Min.	90	90	90	90	90	90
Flash point (COC), °C Min.	165	180	180	180	180	190
Pour Point, °C Max.	(-) 27				(-) 9	0

HEALTH & SAFETY

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are maintained.

For further information please contact our nearest office OR :
Technical Services Dept., Indian Oil Corporation Ltd., G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai – 400 051
E-Mail: tservices@indianoil.co.in OR tech_services@indianoil.co.in

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AD HYDRO POWER LIMITED

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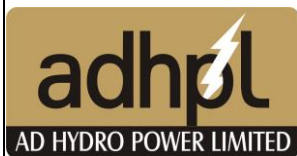
B MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION				
Trade Name	EZ- 602 HS-1 EZ- 602 RP-1 EZ- 602 HL-1 EZ -602 - 1			
Manufacturer/Supplier	ITW Chemin, ITW INDIA LIMITED			
Address	Plot No: 34-37, Phase- 2, IDA, APIIC, Pashamylaram, Medak Dist- 502307, INDIA			
Phone Number	+91 8455 224700/224701			
Fax Number	+91 8455 224705			
E-Mail	chemininfo@itwchemin.com			
2. COMPOSITION/INFORMATION ON THE COMPONENTS				
No Hazardous components as per OSHA'S HAZARD COMMUNICATION STANDARD 29CFR 1910.1200				
Component Name	CAS#	Concentration	Exposure Limits	R-Phrase
Solvent refined base oil	64742-01-04	>60%	Not established	
Lithium soap	Mixture	15-25%		
Additives	Mixture	5-15%		
3. HAZARD IDENTIFICATION				
Main Hazards	No significant hazard.			
4. FIRST AID MEASURES	SYMPTOMS	ACTIONS		
Eye contact	May be Mild irritation at the site of contact.	Wash immediately with plenty of soap and water		
Skin contact	May be irritation and redness	Bathe the eye with running water for 15 minutes. Consult a doctor		
Ingestion	May be irritation of throat	Wash out mouth with water		
Inhalation	May be coughing and sore throat.	Remove causality from exposure ensuring one's own safety whilst doing so.		
5. FIRE FIGHTING MEASURES				
Extinguishing Media	Use foam, dry chemical or carbon dioxide.			
Unsuitable Extinguishing Media	Do not use water jet.			
Special Hazards of Product	This product may give rise to hazardous fumes in a fire.			
Protective Equipment for Fire-Fighting	Wear self-contained breathing apparatus.			
6. ACCIDENTAL RELEASE MEASURES				
Personal Precautions	Material can create slippery conditions underfoot.			
Environmental Precautions	Try to prevent the material from entering drains or rivers.			
Spillages	Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal. Finally flush area with plenty of water.			

For more information please contact info@processaids.in or visit www.processaids.in

Note: MSDS Total pages = 09 (Refer to MSDS files with the Stores department and EHS&S department for detailed MSDS)

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Date:22.09.2021		Revision - 03	Page 49 of 51



AD HYDRO POWER LIMITED

Doc. No. EQHSMS-001-8.2
Title: Emergency Action Plan

T30 SELECT™

MATERIAL SAFETY DATA SHEET

Effective Date: 01/01/2002

T30 SELECT is a diester based synthetic lubricant formulated for use in Ingersoll-Rand Type 30 Reciprocating Air compressors.

1. PRODUCT IDENTIFICATION: Mixture-Chemical Family: Diester

2. HAZARDOUS INGREDIENTS: The components of this product are not listed as hazardous or toxic according to OSHA (29 CFR OSHA 1910.1200), NTP, IARC and SARA 313.

Hazardous Materials Identification System (HMIS):

Health	Flammability	Reactivity	Basis	Hazard Ratings Key:	
1	1	0	—	4 = Highest	0 = Lowest

3. PHYSICAL DATA:

Boiling Point: >680°	Pour Point: -30°F
Vapor Pressure: <0.01 mmHg @ 300°F	Specific Gravity: 0.96 @ 15.5°
Vapor Density: Greater than air	Percent Volatile: Negligible
Solubility in Water: Nil	Evaporation Rate: Not volatile
Appearance: Light straw colored fluid	Odor: Mild ester odor

4. FIRE AND EXPLOSION HAZARD DATA:

Flash Point: 490°F (254°C)
Method Used: COC
Auto Ignition Temperature: 770°F (410°C)
Flammable Limits: Not established
Fire Fighting Media: Water spray, dry chemical, foam or carbon dioxide
Fire Fighting Procedures: Use water to keep fire-exposed container cool. Wear self-contained positive pressure breathing apparatus and full protective gear to fight fire. Water or foam may cause frothing.
Special Fire and Explosion Hazard: None expected

5. HEALTH HAZARD:

Threshold Limit Value: Not Established (Treat as mineral oil; 5mg/meter cubed)
Effects on exposure: Prolonged or repeated skin contact may tend to remove natural skin oils, thus leading to possible irritation and dermatitis.
Medical Conditions Generally Aggravated by Exposure: May aggravate previous skin condition.
Skin Contact: With repeated contact, a skin defatter. May develop redness or mild irritation.
Skin Absorption: Not established
Ingestion (Acute): Not established
Inhalation (Acute): Not established
Eyes: Mild irritation.
Systemic & Other Effects: Not established

T30 Select™

6. REACTIVITY DATA:

Stability: Stable. Will not react violently with water.
Incompatibility: Avoid contact with strong oxidizers such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.
Hazardous Decomposition: Burning will produce toxic fumes.
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Open flames

7. HANDLING AND STORAGE:

Exposure Guidelines: Not Established. OSHA TLV/TWA 5mg/m³ oil mist can be used.
Ventilation: Local exhaust to capture vapor, mist or fumes, if necessary.
Respiratory Protection: Use NIOSH-approved equipment: filter, fume or mist respirator under misty conditions.
Skin Protection: For prolonged use, use chemical resistant gloves to minimize skin contact.
Eye Protection: Use chemical splash goggles when contact may occur.
Special Handling: If splashing occurs, use apron. Do not get in eyes, on skin or clothing. Wash thoroughly after handling.
Storage: Store in a cool, dry place. Keep containers closed when not in use.

8. ENVIRONMENTAL AND DISPOSAL INFORMATION:

Steps to be Taken in Case of Spills: Ventilate area. Prevent spread of spill. Absorb with sand or an inert, absorbent material. Sweep or scoop up and place in a disposal container. Do not contaminate any lakes, ponds, streams, ground water or soil.
Waste Disposal Method: Dispose of in accordance with local, state or federal laws.

9. FIRST AID:

Eyes: Flush with water for at least 15 minutes. Hold eyelids open while flushing. If irritation persists get medical attention.
Skin: Remove contaminated clothing and wash skin thoroughly with soap and water.
Ingestion: Drink 8-10 ounces of water. Do not induce vomiting. Get medical attention immediately.
Inhalation: Remove to fresh air. Get medical attention if discomfort persists.

10. PREPARED BY: Ingersoll-Rand

Note: This information is furnished without warranty, representation, inducement or license of any kind, except that it is accurate to the best of Ingersoll-Rand's knowledge or obtained from sources believed by Ingersoll-Rand to be accurate, and Ingersoll-Rand does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests. Before using any product, READ ITS LABEL.

Emergency Contact:
 Telephone: 704/898-4500
 Telex: 572584 IRACDSN DVDS
 800-B Beaty Street
 Davidson, NC 28036

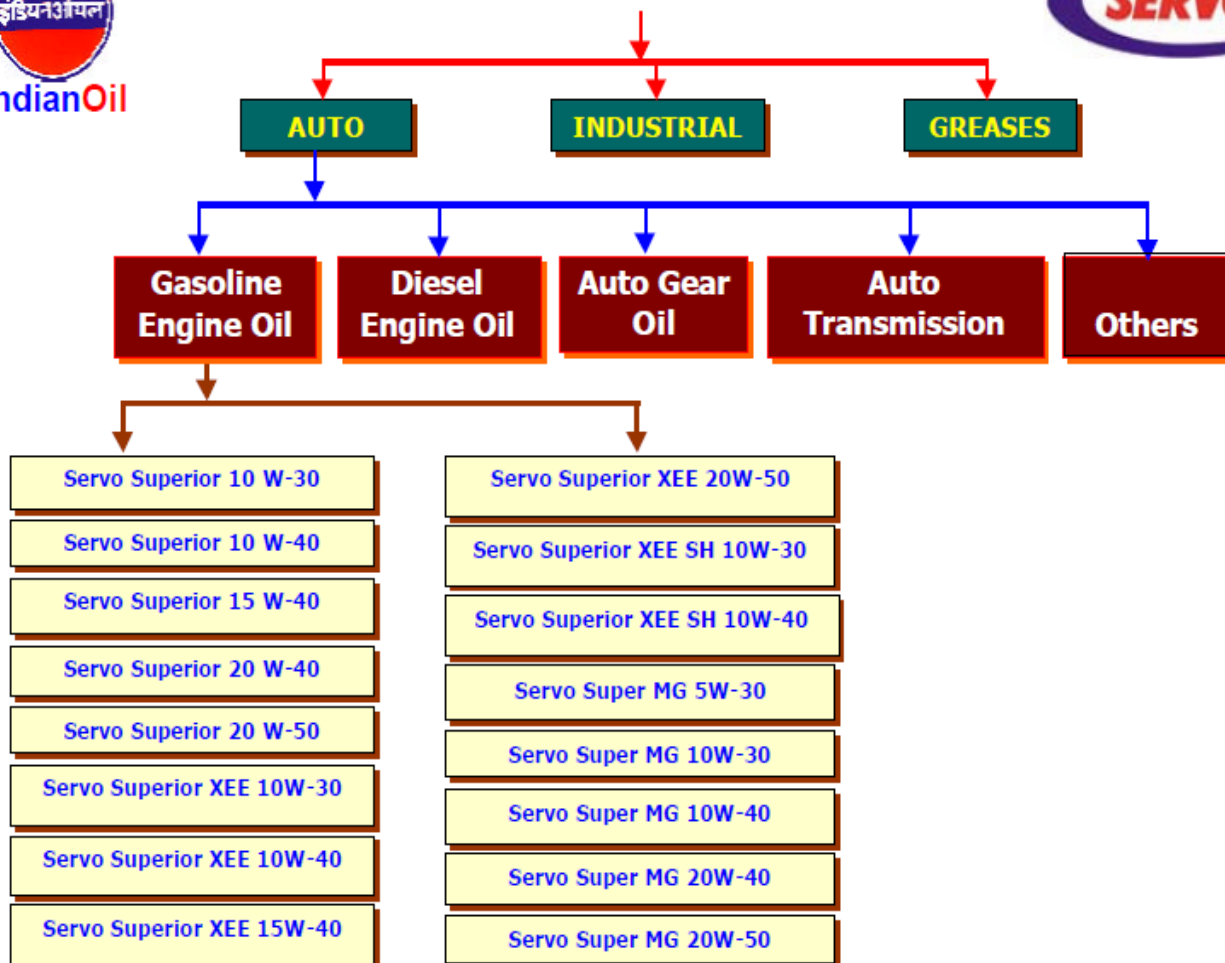


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Date:22.09.2021		Revision - 03	Page 50 of 51



SERVO® MATERIAL SAFETY DATA SHEET



Note: MSDS Total pages = 329 (Refer to MSDS files with the Stores department and EHS&S department for detailed MSDS)

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