



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US OSHA HCS 2024 and Canada Hazardous Products Act (HPA) and  
Hazardous Products Regulation (HPR), as amended

Issuing Date 28-Jan-2019

Revision date 01-Dec-2025

Revision Number 4

## 1. Identification

### Product identifier

**Product Name** SAE 5W-40 Heavy-Duty 100% Synthetic Diesel Oil

### Other means of identification

**Product Code(s)** ADO

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** Diesel oil

**Restrictions on use** Avoid formation of mists

### Details of the supplier of the safety data sheet

#### Supplier Address

AMSOIL INC.  
Bay Adelaide Centre, East Tower  
22 Adelaide St. W  
Toronto, ON, Canada M5H 4E3  
T: +1 877-822-5172

#### Manufacturer Address

AMSOIL INC.  
One AMSOIL Center  
Superior, WI 54880, USA  
T: +1 715-392-7101

**E-mail** compliance@amsoil.com

### Emergency telephone number

**Emergency telephone** CHEMTREC: Within USA and Canada: 1-800-424-9300  
Outside the USA and Canada: +1 703-741-5970  
(collect calls accepted) 24/7

## 2. Hazard(s) identification

### Classification of the substance or mixture

This product is not considered hazardous by either the US OSHA Hazard Communication Standard 2024, or Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended.

### Label elements

#### **Hazard statements**

Not classified.

#### **Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available.

**Other information**

Causes mild skin irritation. Harmful to aquatic life with long lasting effects.

**3. Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Chemical name	CAS No.	Weight-%
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	84605-29-8	1-5

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

**Chemical Additions**

The classification as an IARC Group 1, NTP, OSHA, and ACGIH carcinogen does not apply as it can be shown that the Base oil(s) contain(s) less than 3% DMSO extract as measured by IP 346.

**4. First-aid measures****Description of first aid measures**

<b>General advice</b>	Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove person to fresh air and keep comfortable for breathing.
<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash skin with soap and water. Take off contaminated clothing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Get medical attention if symptoms occur.
<b>Self-protection of the first aider</b>	Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing. May cause gastrointestinal discomfort if consumed in large amounts. May cause temporary eye irritation. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. Prolonged contact may cause redness and irritation.
<b>Effects of Exposure</b>	None known.

**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Treat symptomatically.
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## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream as it may scatter and spread fire.
<b>Specific hazards arising from the chemical</b>	Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapors.
<b>Hazardous combustion products</b>	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Use personal protective equipment as required. See section 8 for more information. Ensure adequate ventilation.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water.
<b>Reference to other sections</b>	For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

## 7. Handling and storage

### Precautions for safe handling

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with used product. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Wash thoroughly after handling.
<b>General hygiene considerations</b>	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Do not reuse empty containers. Store away from incompatible materials. See section 10 for more information.
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## 8. Exposure controls/personal protection

### Control Parameters

<b>Exposure Limits</b>	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here. Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m <sup>3</sup> . Short-term exposure limit (15-minute): 10 mg/m <sup>3</sup> .
<b>Note</b>	See section 16 for terms and abbreviations.
<b>Other information on limit values</b>	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
<b>Biological occupational exposure limits</b>	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.
<b><u>Appropriate engineering controls</u></b>	
<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b><u>Individual protection measures, such as personal protective equipment</u></b>	
<b>Eye/face protection</b>	If there is a risk of contact: Wear safety glasses with side shields (or goggles).
<b>Hand protection</b>	If there is a risk of contact: Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
<b>Skin and body protection</b>	If there is a risk of contact: Wear suitable protective clothing.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>Environmental exposure controls</b>	Avoid release to the environment.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	
<b>Physical state</b>	Liquid
<b>Color</b>	Brown
<b>Odor (includes odor threshold)</b>	Mild hydrocarbon

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Melting point / freezing point</b>		No data available
<b>Boiling point (or initial boiling point or boiling range)</b>		No data available
<b>Flammability</b>		No data available

<b>Flammability Limit in Air</b>		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
<b>Flash point</b>	226 °C / 438.8 °F	Cleveland Open Cup ASTM D 92
<b>Autoignition temperature</b>		No data available
<b>Decomposition temperature</b>		No data available
SADT (°C)		No data available
<b>pH</b>		No data available
pH (as aqueous solution)		No data available
<b>Kinematic viscosity</b>	90.2 cSt at 40 °C 15.2 cSt at 100 °C	ASTM D445
<b>Dynamic viscosity</b>		No data available
<b>Solubility</b>		No data available
Water solubility		No data available
<b>Partition coefficient n-octanol/water (log value)</b>		No data available
<b>Vapor pressure (includes evaporation rate)</b>		No data available
Evaporation rate		No data available
<b>Density and/or relative density</b>	0.8514	No data available
Bulk density		No data available
Liquid Density		No data available
<b>Relative vapor density</b>		No data available
<b>Particle characteristics</b>		
Particle Size		No data available
Particle Size Distribution		No data available
<b><u>Other information</u></b>		
<b>Molecular weight</b>	No information available	
<b>VOC content</b>	No information available	
<b>Softening point</b>	No information available	
<b>Pour Point</b>	-42°C [ASTM D 97]	
<b>Fire Point</b>	236°C (COC) [ASTM D 92]	

**Information with regard to physical hazard classes**

<b>Explosives</b>		
Explosive properties	No information available	
<b>Oxidizing properties</b>		
	No information available	

**10. Stability and reactivity**

<b>Reactivity</b>	None under normal use conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	None known based on information supplied.
<b>Hazardous decomposition products</b>	Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

**11. Toxicological information****Information on likely routes of exposure**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
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<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Contact with eyes may cause irritation.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes mild skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available.

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization in susceptible persons. May cause temporary eye irritation. Prolonged contact may cause redness and irritation.

**Acute toxicity** Based on available data, the classification criteria are not met.

### Numerical measures of toxicity

The following ATE values have been calculated for the mixture:

ATE<sub>mix</sub> (oral) >5000 mg/kg

### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	= 3100 mg/kg ( Rat ) = 3200 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 2.3 mg/L ( Rat ) 4 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes mild skin irritation.
<b>Serious eye damage/eye irritation</b>	No information available.
<b>Respiratory or skin sensitization</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	The classification as an IARC Group 1, NTP, OSHA, and ACGIH carcinogen does not apply as it can be shown that the Base oil(s) contain(s) less than 3% DMSO extract as measured by IP 346.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	Due to the viscosity, this product does not present an aspiration hazard.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts 84605-29-8	-	LC50: =4.5mg/L (96h, Oncorhynchus mykiss)	-	EC50: =23mg/L (48h, Daphnia magna)

**Persistence and degradability** No information available.

#### Bioaccumulation

#### Component Information

Chemical name	Partition coefficient
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts 84605-29-8	0.56

**Other adverse effects** No information available.

### 13. Disposal considerations

#### Disposal methods

**Waste from residues/unused products** Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**California waste information** This product contains one or more substances that are listed with the State of California as a hazardous waste.

### 14. Transport information

**DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG** Not regulated

### 15. Regulatory information

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

Contact supplier for inventory compliance status

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts - 84605-29-8	1.0

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts 84605-29-8	-	X	-	-

**CAA (Clean Air Act)**

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Ethylbenzene - 100-41-4	Carcinogen
Chrysene - 218-01-9	Carcinogen
Naphthalene - 91-20-3	Carcinogen
Cumene - 98-82-8	Carcinogen
Benz[a]anthracene - 56-55-3	Carcinogen
Methanol - 67-56-1	Developmental
Benzene - 71-43-2	Carcinogen Developmental

	Male Reproductive
Toluene - 108-88-3	Developmental

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts 84605-29-8	X	-	X
Diphenylamine 122-39-4	X	X	X
Ethylbenzene 100-41-4	X	X	X
Chrysene 218-01-9	X	X	X
Naphthalene 91-20-3	X	X	X
Cumene 98-82-8	X	X	X
Benz[a]anthracene 56-55-3	X	X	X
Methanol 67-56-1	X	X	X
Benzene 71-43-2	X	X	X
Toluene 108-88-3	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. Other information**

<b><u>NFPA</u></b>	Health hazards 0	Flammability 1	Instability 0	Special hazards -
<b><u>HMIS</u></b>	Health hazards 0	Flammability 1	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

**Legend**

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)
AIIC	Australian Inventory of Industrial Chemicals
ATE	Acute Toxicity Estimate
ASTM	American Society for the Testing of Materials
bar	Biological Reference Values for Chemical Compounds in the Work Area
BAT	Biological tolerance values for occupational exposure
BEL	Biological exposure limits
bw	Body weight
Ceiling	Maximum limit value

CMR	Carcinogen, Mutagen or Reproductive Toxicant
DOT	Department of Transportation (United States)
DSL	Domestic Substances List (Canada)
EmS	Emergency Schedule
ENCS	Existing and New Chemical Substances (Japan)
EPA	U.S. Environmental Protection Agency
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO	International Civil Aviation Organization
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
KECI	Korean Existing Chemicals Inventory
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOELR	No Observable Effect Loading Rate
NTP	National Toxicology Program (United States)
NZIoC	New Zealand Inventory of Chemicals
OECD	Organization for Economic Cooperation and Development
OEL	Occupational exposure limits
OSHA	Occupational Safety and Health Administration of the US Department of Labor
PBT	Persistent, Bioaccumulative and Toxic substance
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PMT	Persistent, Mobile and Toxic
PPE	Personal protective equipment
QSAR	Quantitative Structure Activity Relationship
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)
SADT	Self-Accelerating Decomposition Temperature
SAR	Structure-activity relationship
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
SL	Surface Limit
STEL	Short Term Exposure Limit
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
TCSI	Taiwan Chemical Substance Inventory
TDG	Transport of Dangerous Goods (Canada)
TSCA	Toxic Substances Control Act (United States)
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
DS	Dermal Sensitizer

Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitizer
RS	Respiratory Sensitizer
S	Sensitizer
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation
dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

**Key literature references and sources for data used to compile the SDS**

U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 U.S. Environmental Protection Agency  
 Acute Exposure Guideline Level(s) (AEGl(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications  
 International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program  
 International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set  
 United Nations World Health Organization (WHO)

**Issuing Date** 28-Jan-2019

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**Revision Note** Updated format.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**