



# SAFETY DATA SHEET

## FLYERS HD 15W-40 ENGINE OIL CK-4

### Section 1. Identification

**GHS product identifier** : FLYERS HD 15W-40 ENGINE OIL CK-4

**Other means of identification** : Not available.

**Relevant identified uses of the substance or mixture and uses advised against**

Engine oil.

**Supplier's details** : Flyers Energy  
2360 Lindbergh Street  
Auburn, CA 95602  
(530) 885-0401

**Emergency telephone number (with hours of operation)** : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3877 (24/7)

### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A  
SKIN SENSITIZATION - Category 1  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
AQUATIC HAZARD (ACUTE) - Category 3  
AQUATIC HAZARD (LONG-TERM) - Category 3

**GHS label elements**  
**Hazard pictograms**



**Signal word** : Warning

**Hazard statements** : Causes serious eye irritation.  
May cause an allergic skin reaction.  
Suspected of damaging the unborn child.  
Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

**Response** : IF exposed or concerned: Get medical attention. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

### Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

Ingredient name	%	CAS number
Distillates (petroleum), solvent-dewaxed heavy paraffinic	5 - 10	64742-65-0
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoctyl) esters, zinc salts	1 - 5	113706-15-3
Phenol, dodecyl-, branched	0.1 - 1	121158-58-5
Organo moly-sulfur complex	0.1 - 1	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.

- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.
- Over-exposure signs/symptoms**
- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Indication of immediate medical attention and special treatment needed, if necessary**

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

**Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub> or foam.
- Unsuitable extinguishing media** : Do not use direct water stream.

- Specific hazards arising from the chemical** : This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Aldehydes, Sulfur oxides, Oxides of carbon, Incomplete combustion products, Smoke, Fume.
- Special protective actions for fire-fighters** : No special measures are required.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), solvent-dewaxed heavy paraffinic	<b>ACGIH TLV (United States, 4/2014).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>NIOSH REL (United States, 10/2013).</b> STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist <b>OSHA PEL (United States, 2/2013).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Mist

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not available.

**Melting point/Freezing point** : -30°C (-22°F)  
**Boiling point** : >316°C (>600.8°F)  
**Flash point** : Open cup: >200°C (>392°F) [Cleveland.]  
**Burning time** : Not applicable.  
**Burning rate** : Not applicable.  
**Evaporation rate** : Not available.  
**Flammability (solid, gas)** : Not available.  
**Lower and upper explosive (flammable) limits** : Lower: 0.9%  
 Upper: 7%  
**Vapor pressure** : <0.013 kPa (<0.1 mm Hg) [room temperature]  
**Vapor density** : >2 [Air = 1]  
**Relative density** : 0.88  
**Solubility** : Negligible in water.  
**Partition coefficient: n-octanol/water** : >3.5  
**Auto-ignition temperature** : Not available.  
**Decomposition temperature** : Not available.  
**SADT** : Not available.  
**Viscosity** : Kinematic (room temperature): 0.145 cm<sup>2</sup>/s (14.5 cSt)  
 Kinematic (40°C (104°F)): 1.09 cm<sup>2</sup>/s (109 cSt)

**Section 10. Stability and reactivity**

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.  
**Chemical stability** : The product is stable.  
**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
**Conditions to avoid** : Avoid all possible sources of ignition (heat, spark or flame).  
**Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.  
**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Section 11. Toxicological information**

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), solvent-dewaxed heavy paraffinic	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoocetyl) esters, zinc salts	LD50 Dermal	Rat	>3160 mg/kg	-
	LD50 Oral	Rat	2600 mg/kg	-

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoctyl) esters, zinc salts	Skin - Irritant	Rabbit	-	4 hours	-
	Eyes - Severe irritant	Rabbit	-	336 hours	-

**Sensitization**

There is no data available.

**Mutagenicity**

There is no data available.

**Carcinogenicity**

There is no data available.

**Reproductive toxicity**

There is no data available.

**Teratogenicity**

There is no data available.

**Specific target organ toxicity (single exposure)**

There is no data available.

**Specific target organ toxicity (repeated exposure)**

There is no data available.

**Aspiration hazard**

Name	Result
Distillates (petroleum), solvent-dewaxed heavy paraffinic	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Dermal contact. Eye contact. Inhalation. Ingestion.

**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Irritating to mouth, throat and stomach.

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

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

**Potential immediate effects** : No known significant effects or critical hazards.  
**Potential delayed effects** : No known significant effects or critical hazards.

**Long term exposure**

**Potential immediate effects** : No known significant effects or critical hazards.  
**Potential delayed effects** : No known significant effects or critical hazards.

**Potential chronic health effects**

**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : Suspected of damaging the unborn child.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

Route	ATE value
Oral	105050.5 mg/kg

**Section 12. Ecological information**

**Toxicity**

Product/ingredient name	Result	Species	Exposure
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts	EC50 5.4 mg/L	Daphnia	48 hours
	LC50 4.5 mg/L	Fish	96 hours

**Persistence and degradability**

Product/ingredient name	Test	Result	Dose	Inoculum
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts	-	1.5 % - Not readily - 28 days	10 mg/L	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts	-	-	Not readily



## Section 12. Ecological information

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Flyers HD 15W40 ENGINE OIL CK-4	>3.5	-	low
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts	0.9	-	low
Phenol, dodecyl-, branched	6.1	1601	high

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : There is no data available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-
<b>Transport hazard class(es)</b>	-	-	-
<b>Packing group</b>	-	-	-
<b>Environmental hazards</b>	No.	No.	No.
<b>Additional information</b>	-	-	-

**AERG** : Not applicable.

## Section 14. Transport information

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** Not determined.  
**Clean Water Act (CWA) 307:** Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoctyl) esters, zinc salts

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Immediate (acute) health hazard  
 Delayed (chronic) health hazard

**Composition/information on ingredients**

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Phosphorodithioic acid, mixed O,O-bis(sec-Bu1 - 5 and isoctyl) esters, zinc salts		No.	No.	No.	Yes.	No.
Phenol, dodecyl-, branched	0.1 - 1	No.	No.	No.	Yes.	Yes.
Organo moly-sulfur complex	0.1 - 1	No.	No.	No.	Yes.	No.

**SARA 313**

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoctyl) esters, zinc salts	113706-15-3	1 - 5
<b>Supplier notification</b>	Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isoctyl) esters, zinc salts	113706-15-3	1 - 5

## Section 15. Regulatory information

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts** : None of the components are listed.  
**New York** : None of the components are listed.  
**New Jersey** : The following components are listed: Distillates (petroleum), solvent-dewaxed heavy paraffinic; Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts  
**Pennsylvania** : The following components are listed: Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts  
**California Prop. 65**

No products were found.

### International regulations

- International lists** : **Australia inventory (AICS)**: Not determined.  
**China inventory (IECSC)**: Not determined.  
**Japan inventory**: Not determined.  
**Korea inventory**: Not determined.  
**Malaysia Inventory (EHS Register)**: Not determined.  
**New Zealand Inventory of Chemicals (NZIoC)**: Not determined.  
**Philippines inventory (PICCS)**: Not determined.  
**Taiwan inventory (CSNN)**: Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## Section 16. Other information

### History

- Date of issue mm/dd/yyyy** : 05/01/2018  
**Version** : 1  
**Prepared by** : Flyers Energy, LLC

- Key to abbreviations** : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.