



# Safety Data Sheet

Conforms to HCS 2012 (29 CFR 1910.1200)

## Section 1. Identification

### Product identifier

**Product Name:** TRIBODYN FULL SYNTHETIC ENGINE OIL SAE: 0W-20, 5W-20, 5W-30, 5W30 TriDex, 5W-40HD, 10W-30 & 15W-40HD.

**Other names:**

**Part/Product Number(s):**

**Material Use:** Automobile engine oil, lubricant

**Uses advised against:** All others.

### **Manufacturer:**

TriboDyn Technologies, Inc.

109 Summerville Dr., Mooresville, NC 28115, USA

Phone: 859-750-6299

**Issuing date:** April 29, 2017

**Revision date:** April 29, 2017

**Revision number:** 0

**In case of emergency:** Contact TriboDyn Technologies, Inc. at 859-750-6299 - Between 8:00 am & 8:00 pm EST

## Section 2. Hazards Identification

**OSHA/HCS Status:** This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or Mixture:** Not classified.

### GHS Label Elements

**Hazard pictograms:** No pictogram.

**Signal word:** No signal word.

**Hazard statement:** No known significant effects or critical hazards.

### Precautionary statements

**General:** Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention:** Not applicable.

**Response:** Not applicable.

**Storage:** Not applicable.

**Disposal:** Not applicable.

**Hazards not otherwise classified (HNOC):** Defatting to the skin. Hot motor oil may cause potentially serious burns.

**Other information:** USED MOTOR OILS – Used motor oils may contain hazardous components which have the potential to cause skin cancer.  
See Toxicological Information, Section 11 of this Safety Data Sheet.

### Section 3. Composition/Information on Ingredients

Petroleum mineral oil lubricant base stock with proprietary performance additives mixture.

**Substance/mixture:** Mixture

<b>Components Name</b>	<b>CAS number</b>	<b>Weight %**</b>
Lubricant Synthetic Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	Mixture *	70 – 99
Passenger Car Engine Oil Additives Mixture	Confidential	1 – 10
Zinc dialkyl dithiophosphate	68649-42-3	0 - <1%

This product does not contain known hazardous materials at the  $\geq 1\%$  level or known carcinogens at the  $\geq 0.1\%$  level as defined by 29 CFR 1910.1200.

\* Contains one or more of the following CAS #s: 64742-52-5, 64742-54-7, 64742-65-0, 64742-56-9, 64742-47-8, 64742-58-1, 64742-01-4, 64742-53-6, 64742-71-8.

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

### Section 4. First Aid Measures

#### Description of necessary first aid measures

**General Advice:** No specific first aid measures are required. Get medical attention if irritation develops and persists.

**Eye contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops and persists.

**Skin contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

**Inhalation:** In case of inhalation of decomposition products in a fire, symptoms may be delayed. If inhaled, remove to fresh air. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.

**Ingestion:** Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

**Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training.

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

See Section 11 for more detailed information on health effects and symptoms.

#### **Most Important**

**Symptoms and Effects:** Personnel with pre-existing skin disorders should avoid contact with this product. Under normal use conditions, no adverse effects to health are known.

**Eye contact:** Not expected to cause prolonged or significant eye irritation.

**Skin contact:** Contact with skin is not expected to cause prolonged or significant irritation. Contact with skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

**Inhalation:** Not expected to be harmful if inhaled. Contains petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficult breathing.

**Ingestion:** Not expected to be harmful if swallowed.

**Note to physician:** Treat symptomatically.

## Section 5. Fire-Fighting Measures

**OSHA Flammable Category:** None

**Uniform Fire Code:** Class IIIB

**Flash Point:** >176.7 °C (>350 °F)

### Extinguishing Media

**Suitable Media:** In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide (CO<sub>2</sub>) extinguisher or spray.

**Unsuitable Media:** Do not use water jet.

### **Specific Hazards Arising from the Chemical:**

Keep product and empty container away from heat and sources of ignition as product will burn. Contact with strong oxidizers may cause fire. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be contained, prevented from being discharged to any waterway, sewer or drain and disposed of in accordance with local regulations.

**Hazardous Combustion Products:** Combustion products may include the following: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide (CO) and Nitrogen oxides.

**Protection of Fire Fighters:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

**For emergency responders:** If specialized clothing is required to deal with the spillage, take note of a n y 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). See Section 12 for ecological information.

### Methods and materials for containment and cleaning up

**Small Spills:** Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large Spills:** Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. 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. Dispose of via a licensed waste disposal contractor.

NOTE: If RQ (Reportable Quantity) is exceeded or if spills enter a body of water, report immediately to the USEPA's National Response Center at (800) 424-8802. Check with your local and state regulators regarding their reporting requirements.

## Section 7. Handling and Storage

### Precautions for safe handling

**Protective measures:** Eye protection and face shield should be used if material is used under conditions that increase the chances of splattering. Put on appropriate personal protective equipment (see Section 8). Keep out of reach of children.

**Advice on general occupational hygiene:** Do not get in eyes, on skin or on clothing. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.  
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. 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. Use appropriate containment to avoid environmental contamination. Avoid contaminating soil or releases into sewage or drainage systems and bodies of water.

**Bulk material handling:** Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient.

## Section 8. Exposure Controls/Personal Protection

### Control parameters

#### Occupational Exposure Limits

Chemical name	ACGIH		OSHA		NIOSH	
	TLV	STEL	TLV	STEL	TWA	Ceiling
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	5 mg/m <sup>3</sup> (mist)	10 mg/m <sup>3</sup> (mist)	5 mg/m <sup>3</sup> (mist)	–	–	–

**Appropriate engineering controls:** Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/Face Protection:** Wear safety glasses with side shields. A face shield may be necessary under some conditions.

### Skin and Body Protection

**Hand protection:** Wear protective gloves if prolonged or repeated contact is likely. Wear chemical

resistant gloves. Recommended: Nitrile gloves. Consult your supervisor or Standard Operating Procedure (SOP) for special handling instructions.

- Body protection:** No protective equipment is needed under normal use conditions. For non-routine tasks, personal protection equipment for the body should be selected based on the task being performed and the risks involved.
- Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.
- Respiratory protection:** No respiratory protection is normally required. If user operation generates an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from measured concentrations of this material. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection

## Section 9. Physical and Chemical Properties

Attention: Data represents typical or target values and are not intended to be specifications.

### Appearance

Physical State	: Liquid
Color	: TriboDyn Blue
Odor	: Petroleum odor
Odor threshold	: Not available
pH	: Not applicable
Pour point	: -9°C to -36°C (15.8°F to -32.8°F ) (Typical or Target)
Boiling Point	: Not available
Flash Point (Closed cup)	: >176.6 °C (>350 °F) (Typical or Target)
Evaporation rate	: <1 (Butyl acetate = 1)
Flammability (solid, gas)	: Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	: Not available
Vapor pressure	: <0.01 mmHg Maximum @ 37.8 °C (100 °F)
Vapor density (Air +1)	: >1 Minimum
Relative density	: 0.86 - 0.88 kg/l at 15°C (Typical or Target)
Solubility	: In soluble in water
Partition coefficient: n-Octanol/water	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
Viscosity (cSt @ 40 °C)	: 46 – 100 mm <sup>2</sup> /s (cSt) @ 40 °C (104 °F) (Typical or Target)
Viscosity (cSt @ 100 °C)	: 5.6 – 17.1 mm <sup>2</sup> /s (cSt) @100 °C (212 °F) (Typical or Target)
VOC %	: None

## Section 10. Stability and Reactivity

- Reactivity:** Not reactive under normal storage conditions
- Chemical stability:** Stable under normal storage conditions
- Possibility of hazardous reactions:** None under normal processing.
- Hazardous polymerization:** Hazardous polymerization does not occur.
- Conditions to avoid:** Heat, flames and sparks.
- Incompatible materials:** Oxidizing agents, Halogens, Halogenated compounds

**Hazardous decomposition products:** May include: Fumes, Oil vapors, Smoke, Carbon Oxides (including carbon monoxide and carbon dioxide), Aldehydes, Nitrogen oxides, and incomplete combustion products.

## Section 11. Toxicological Information

### Information on toxicological effects

#### Substance/Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
			Typical for mineral oil
<b>Inhalation</b>	Unlikely to be harmful		>2.18 mg/L (rat) (mist, estimated)
<b>Dermal</b>	Unlikely to be harmful		>2000 mg/L (rabbit) (estimated)
<b>Oral</b>	Unlikely to be harmful		>2000 mg/l (rat) (estimated)

<b>Aspiration hazard:</b>	Not expected to be an aspiration hazard.
<b>Skin Corrosion/Irritation:</b>	May cause mild skin irritation. Repeated exposure may cause skin dryness or cracking.
<b>Serious Eye Damage/Irritation:</b>	May cause mild eye irritation.
<b>Skin Sensitization:</b>	No information on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification in the formulation).
<b>Respiratory Sensitization:</b>	No information on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification in the formulation).
<b>Specific Target Organ Toxicity (Single Exposure) - STOT-SE:</b>	No information on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification in the formulation).
<b>Specific Target Organ Toxicity (Repeated Exposure) – STOT-RE:</b>	No information on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification in the formulation).
<b>Carcinogenicity:</b>	No information on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification in the formulation).
<b>Germ Cell Mutagenicity:</b>	No information on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification in the formulation).
<b>Reproductive Toxicity</b>	No information on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification in the formulation).

### Information on Toxicity Effects of Compounds

#### **Lubricant Base Mineral Oil (Petroleum)**

Mineral oils are known to cause cancer because of carcinogenic components (e.g. Benzene). The lubricant base mineral oils in this product have been highly refined by a variety of processes including severe solvent extraction, severe hydro cracking or severe hydro treating to reduce aromatics and improve performance characteristics. The oils in the is product meets the IP-346 criteria of less than 3 percent PHA's and are not considered to be a carcinogen by the International Agency for Research on Cancer.

None of the oils in this product requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IRAC) as: carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified

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by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

**Used motor oils:**

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used engine oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used oil is not expected to have serious effects on humans if the oil is thoroughly removed by washing with soap and water.

**Numerical measures of toxicity**

**Unknown Acute Toxicity:** 0% of the mixture consists of ingredient(s) of unknown toxicity.

**Acute toxicity estimates:** There is no data available.

The following values are calculated based on chapter 3.1 of the GHS document.

**ATE mix (oral)** - There is no data available

**ATE mix (dermal)** - There is no data available

## Section 12. Ecological Information

The information is based on data available for the material, the components of the material, and similar materials.

**Ecotoxicity:** Not expected to be harmful to aquatic organisms.

**Mobility:** Base oil component – Low solubility and floats and is expected to migrate from water to land. Expected to partition to sediment and wastewater solids.

**Soil/water partition coefficient (K<sub>oc</sub>):** Not available.

**Persistence and degradation**  
**Biodegradation:** Base oil component – Expected to be inherently biodegradable.

**Bio accumulative potential**  
**Bioaccumulation:** This product is not expected to bio accumulate through food chain in the environment.

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

**Other ecological information:** Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## Section 13. Disposal Considerations

Disposal recommendations based on material supplied.

**Waste treatment methods**

**Product waste:** Significant quantities of waste product residues should not be disposed of via the sanitary sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Incineration or landfill should only be considered when recycling is not feasible. Oil collection services are available for used oil recycling.

**Contaminated packaging:** Empty containers or liners may retain some product residues and could pose a potential fire and explosion hazard. Do not cut, puncture, or weld containers.

**Other information:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport Information

**General information:** Petroleum Lubricating oil - Not regulated.

	DOT Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated
Proper Shipping Name	Petroleum lubrication oil	Petroleum lubrication oil	Petroleum lubrication oil
Hazard class(s)	-	-	-
Packaging group	-	-	-
Environmental hazards	No	No	No
Marine Pollutant	No	No	No
Addition 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.

## Section 15. Regulatory Information

### United States Regulations

**United States Inventory (TSCA 8b):** All components are listed or exempted.

**SARA 302/304:** No products were found.

**SARA 311/312:**

Immediate (Acute) Health Effects:	No
Delayed (Chronic) Health Effects:	No
Fire Hazard:	No
Sudden Release of Pressure Hazard:	No
Reactivity Hazard:	No

**SARA 313:**

The following components of this material are found on the EPCRA 313 list:

Zinc dialkyl dithiophosphate <1.0%

**Supplier notification:** This product does not contain any hazardous ingredients at or above regulated thresholds.

**CWA (Clean Water Act):** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA:** This material, as supplied, does not contain any substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

### State Regulations

**Massachusetts:** None of the components are at or above regulated thresholds.

**New Jersey:** Petroleum Oil (Motor Oil)

**Pennsylvania:** None of the components are at or above regulated thresholds.

**California Proposition 65:** WARNING: This product contains a chemical known to the State of California to cause cancer.  
None.

### Canada

**WHMIS Hazard Class:** Not regulated.

### International Chemical Inventories:

All components comply with the following chemical inventory requirements: ACIS (Australia), DSL (Canada) EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines).

## Section 16. Other Information

<b>NFPA Rating:</b>	<b>Health Hazard – 0</b>	<b>Flammability – 1</b>	<b>Instability/Reactivity – 0</b>
<b>HMIS Rating:</b>	<b>Health Hazard – 0</b>	<b>Flammability – 1</b>	<b>Physical Hazards – 0</b>

(NFPA & HMIS Hazard Rating Key: 0 - Minimum Hazard; 1 - Slight Hazard; 2 - Moderate Hazard; 3 - High Hazard; 4 - Extreme Hazard; \* - Chronic Hazard Indicator, & PPE - Personal Protective Equipment Index A to L. These values are obtained using the



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guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS or Hazardous Material Identification System).

#### Key to abbreviations

OSHA = Occupational Safety and Health Administration  
ACGIH = American Conference of Industrial Hygienists  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS Number = Chemical Abstracts Service Registry Number  
cSt = Centistroke (mm<sup>2</sup>/s)  
GHS = Globally Harmonized System of Classification and Labeling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods

Log Pow = logarithm of the octanol/water partition coefficient  
OEL = Occupational Exposure Limit  
SDS = Safety Data Sheet  
STEL = Short term exposure limit TWA = Time weighted average  
UN = United Nations  
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

#### Consumer Product Improvement Act of 2008, General Conformity Certification

**For Consumer Product Packages: This product has been evaluated and is certified to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission. Where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No testing is required to certify compliance with the provisions. The date of the manufacturing is stamped on the product container.**

#### Disclaimer

All reasonably practicable steps have been taken to ensure 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 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. This information is furnished upon condition that the person receiving it shall make their own determination of the suitability of the material for their particular purpose.

**End of Safety Data Sheet**