SAFETY DATA SHEET

Synthetic Gear Oil 680

Section 1. Identification

GHS product identifier : Synthetic Gear Oil 680

Product code : 301607150007

Other means of identification : Not available.

Product type : Liquid.

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

Identified uses
Lubricating Oil Synthetic

Uses advised against
Not applicable.

Supplier's details : Calumet Branded Products, LLC
1060 N Capitol Ave Suite 6-401
Indianapolis, IN 46204
USA
Technical Services:317-328-5660

Emergency telephone number (with hours of operation) : 24 hr. CHEMTREC 1-800-424-9300 / International 1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Hazards identified when used : No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

Ingredient name	Synonyms	%	Identifiers
Dec-1-ene, homopolymer, hydrogenated	Dec-1-ene, oligomers, hydrogenated; 1-Decene, homopolymer, hydrogenated; Hydrogenated polydecene; E 907; hydrogenated poly-1-decene; hydrogenated polydec-1-ene; hydrogenated poly-alpha-olefin; 1-Decene, hydrogenated; Hydrogenated decene homopolymer; Hydrogenation reaction products of polymer of dec-1-ene; Hydrogenated polymer of dec-1-ene; Hydrogenated alpha-olefin (C4-14) oligomer (2-23); Hydrogenated alpha-olefin (C4-10) oligomer (3-23); HOMOPOLYMER, DECENE HYDROGENATED	≥1 - ≤5	CAS: 68037-01-4
Amines, C12-14-tert-alkyl	(C12-14) tert-Alkyl primary amines; Primene 81-R; t-Alkyl-C12-14-primary amines; C12-14 tert-Alkylamines; Monoalkyl (or alkenyl, C5-28) amine; t-Alkyl (C12-C14) primary amines; tert-Alkyl(C=12-14) amines; (C12-14) tert-alkylamines; Tert-Alkyl (C12-C14), Amines; (C12-14)-tert-Alkyl-amine; C12-14-tert-ALKYL AMINES	≥0.1 - ≤1	CAS: 68955-53-3

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 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. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for 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.

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 : 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.

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.

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : 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 spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid release to the environment.

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. 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. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Dec-1-ene, homopolymer, hydrogenated	None.
Amines, C12-14-tert-alkyl	None.

Biological exposure indices

No exposure indices known.

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 : 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: safety glasses with side-shields.

Section 8. Exposure controls/personal protection

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 : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Yellow.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Open cup: 244.44°C (472°F) [Cleveland]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
Ingredient name	**mm Hg**	**kPa**	**Method**	**mm Hg**	**kPa**	**Method**
Amines, C12-14-tert-alkyl	0.17	0.023	EU A.4			

Relative vapor density : Not available.

Relative density : 0.8668

Solubility(ies) :

Media	Result
cold water hot water	Not soluble Not soluble

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Dec-1-ene, homopolymer, hydrogenated	343 to 369	649.4 to 696.2	ASTM D 2159

Decomposition temperature : Not available.

Section 9. Physical and chemical properties

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): 692 mm^2/s (692 cSt)

Particle characteristics

Median particle size : Not applicable.

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 : No specific data.

Incompatible materials : No specific data.

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
Dec-1-ene, homopolymer, hydrogenated	**Rat - Oral - LD50** >5000 mg/kg **Rat - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >5.2 mg/l [4 hours]
Amines, C12-14-tert-alkyl	**Rat - Oral - LD50** 300 mg/kg **Rabbit - Dermal - LD50** 1120 mg/kg Toxic effects: Eye - Mydriasis (pupillary dilation) Behavioral - Tremor Behavioral - Convulsions or effect on seizure threshold **Rat - Dermal - LD50** 251 mg/kg Toxic effects: Behavioral - Convulsions or effect on seizure threshold Skin After topical exposure - Primary irritation **Rat - Inhalation - LC50 Vapor** 1.19 mg/l [4 hours]

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Rabbit - Skin - Severe irritant** Amount/concentration applied: 0.5 Ml **Rabbit - Skin - Severe irritant** Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Serious eye damage/eye irritation

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Rabbit - Eyes - Severe irritant** Amount/concentration applied: 0.1 Ml

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Guinea pig - skin** Result: Sensitizing

Skin

Conclusion/Summary [Product] : Not available.

Ingredient name	Conclusion/Summary
Dec-1-ene, homopolymer, hydrogenated	Not sensitizing

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**In vitro - Bacteria** In vitro Mammalian Cell Gene Mutation Test Result: Negative **In vitro - Bacteria** Bacterial Reverse Mutation Test Result: Negative

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Rat - Oral** One-Generation Reproduction Toxicity Study Maternal toxicity: Positive Fertility effects: Negative Developmental: Negative

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
Dec-1-ene, homopolymer, hydrogenated	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Sub-acute - Rat - Dermal - NOAEL** Repeated Dose Dermal Toxicity: 21/28-day Study 20 mg/kg **Sub-acute - Rat - Inhalation - NOAEL** 19 mg/m³ [4 weeks]

Conclusion/Summary [Product] : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Synthetic Gear Oil 680 Dec-1-ene, homopolymer, hydrogenated Amines, C12-14-tert-alkyl	N/A N/A 500	2631.6 2500 251	N/A N/A N/A	N/A N/A 1.19	N/A N/A N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	**Chronic - NOEC** Fish 0.078 mg/l [96 days]

Conclusion/Summary [Product] : Not available.

Persistence and degradability

Product/ingredient name	Result
Amines, C12-14-tert-alkyl	OECD [Ready Biodegradability - Closed Bottle Test] 21.8% [28 days] - Not readily

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Amines, C12-14-tert-alkyl	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Dec-1-ene, homopolymer, hydrogenated	>6.5	-	High
Amines, C12-14-tert-alkyl	2.9	-	Low

Mobility in soil

Soil/Water partition coefficient : Not 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 at all times 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. 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	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

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 IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: bis(2-ethylhexyl) hydrogen phosphate; 2-ethylhexyl dihydrogen phosphate; naphthalene

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

TSCA 8(d) H and S data reporting: naphthalene

Clean Water Act (CWA) 307: naphthalene

Clean Water Act (CWA) 311: naphthalene

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

Section 15. Regulatory information

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ (lbs)	SARA 302 TPQ (gallons)	SARA 304 RQ (lbs)	SARA 304 RQ (gallons)
ethylene oxide	≤0.1	Yes.	1000	-	10	-
propylene oxide	≤0.1	Yes.	10000	1444.3	100	14.4

SARA 304 RQ : 377358490.6 lbs / 171320754.7 kg [52212915.7 gal / 197647386.6 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Classification
Dec-1-ene, homopolymer, hydrogenated	≥1 - ≤5	ASPIRATION HAZARD - Category 1
Amines, C12-14-tert-alkyl	≥0.1 - ≤1	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

⚠ **WARNING**: This product can expose you to chemicals including Ethyl acrylate, which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Ethyl acrylate	-	-
Methanol	-	Yes.
2-ethylhexyl acrylate	-	-
Naphthalene	Yes.	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 15. Regulatory information

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

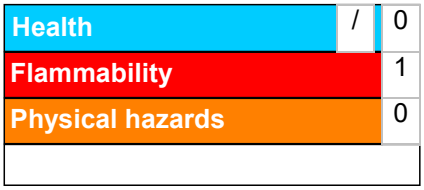
Not listed.

Inventory list

Australia	:	All components are listed or exempted.
Canada	:	All components are listed or exempted.
China	:	All components are listed or exempted.
Eurasian Economic Union	:	**Russian Federation inventory**: Not determined.
Japan	:	**Japan inventory (CSCL)**: All components are listed or exempted. **Japan inventory (ISHL)**: Not determined.
New Zealand	:	Not determined.
Philippines	:	Not determined.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	Not determined.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	All components are active or exempted.
Viet Nam	:	Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Not classified.

History

Date of printing	:	1/26/2026
Date of issue/Date of revision	:	1/26/2026
Date of previous issue	:	6/19/2025
Version	:	9

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
DOT = Department of Transportation
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
TDG = Transportation of Dangerous Goods
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

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.