



AMALIE Elixir Full Synthetic dexos1™ Gen 2 0W-20

(2/26/19 edition)

AMALIE Elixir Full Synthetic dexos1™ Gen 2 0W-20 is a full synthetic motor oil blended with high quality synthetic base stocks and the latest additive technology to provide the ultimate protection for your engine. Specifically formulated for the rigorous environment of gas-direct engine (GDI) and turbo gas-direct engine (TGDI) designs as well as providing increased protection for carbureted or normally fuel injected engines. AMALIE Elixir Full Synthetic dexos1™ Gen 2 0W-20 contains additive technology designed to prevent low-speed pre-ignition (LSPI). LSPI can lead to pre-mature engine failure and is a major concern of the automotive industry for vehicles employing GDI or TGDI technology. Elixir Synthetic dexos1™ Gen 2 oils also provide increased wear protection, oxidation and shear stability over previous oil categories, conventional or synthetic blend formulations. It may be used in passenger cars and light duty trucks requiring the use of API SN / SN Plus, SN, SM, SL, ILSAC GF-5, or dexos1™ Gen 2 oils are required.

*Always refer to your vehicles operating manual to select the correct grade oil for your engine.

Benefits

- Outstanding thermal and oxidation stability.
- Excellent sludge and varnish protection.
- Formulated to prevent LSPI.
- Volatility: Lowers oil vaporization and consumption at extreme conditions.
- Increased wear protection over previous oil categories.

Typical Physical and Chemical Properties

Viscosity Grade.....	SAE 0W-20
Kinematic Viscosity @ 100°C, cSt.....	8.5
Kinematic Viscosity @ 40°C, cSt.....	45.0
Viscosity Index.....	160
Cold Cranking Viscosity, cP @ -35(°C).....	5800
Flash Point, °C (°F).....	210 (410)
Pour Point, °C (°F).....	-45 (-44)
HT/HS Viscosity, cP.....	>2.6
TBN, mgKOH/g.....	9.4
Noack Volatility, %weight loss.....	12.0

Typical values are listed. Variations not affecting the performance of this fluid may occur during production.



AMALIE Elixir Full Synthetic dexos1™ Gen 2 0W-20 Application Chart

SPECIFICATIONS	Elixir Full Synthetic
API:	
SN / SN Plus, SN, SM, SL, SJ, SG	√
CF/CF-2	*
ILSAC:	
GF-5, GF-4, GF-3	√
ACEA: See Note Below	
C5	*
Ford:	
M2C 947 B1	√
DaimlerChrysler:	
MS 6395K	√
Honda HTO-06	
General Motors:	
GM dexos1® Gen. 2	√
GM 4718M	√
GM 6094M	√
Toyota (where 0W-20 is specified)	√
Hyundai (where 0W-20 is specified)	√
Kia (where 0W-20 is specified)	√
Nissan (where 0W-20 is specified)	√
CID AA-52039	√
Mil-L-2104-B	√
Mil-L-46152	√

* - Suitable for use

Note: ACEA sequences and some OEM specifications are viscosity specific. Please consult your representative. Update February 2019.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· 1.1 Product identifier

- Trade name: AMALIE ELIXIR FULL SYN 0W-20
- Other means of identification: No other identifiers

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

- Application of the substance / the mixture: Lubricant
- Uses advised against: No further relevant information available.

· 1.3 Details of the supplier of the Safety Data Sheet

- Supplier:
AOCUSA
Made in U.S.A.

· 1.4 Emergency telephone number:

- ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

- The product is not classified as hazardous according to the Globally Harmonized System (GHS).
- The product is not classified as hazardous according to OSHA GHS regulations within the United States.
- The product is not classified as hazardous according to the CLP regulation.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

- The product is not classified as hazardous according to OSHA GHS regulations within the United States.
- The product is not classified as hazardous according to the CLP regulation.

- Hazard pictograms Not Regulated
- Signal word Not Regulated
- Hazard statements Not Regulated.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA
GHS

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- **Additional information:**
Safety data sheet available on request.

- **2.3 Other hazards** There are no other hazards not otherwise classified that have been identified.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components:

	Trade Secret tris(branched-alkyl) borate ⚠ Eye Irrit. 2, H319; Skin Sens. 1B, H317	<1%
CAS: 84605-29-8 EINECS: 283-392-8 Reg.nr.: 01-2119493626-26-XXXX	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts ⚠ Eye Dam. 1, H318 ⚠ Aquatic Chronic 2, H411 ⚠ Skin Irrit. 2, H315	<0,25%

Additional information:

Note L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 'Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions - Dimethyl sulphoxide extraction refractive index method', Institute of Petroleum, London. This product meets these requirements.

SECTION 4: First aid measures

4.1 Description of first aid measures

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation is experienced, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Nausea in case of ingestion.
Gastric or intestinal disorders when ingested.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

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- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 - Water haze or fog
 - Foam
 - Fire-extinguishing powder
 - Carbon dioxide
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
 - In case of fire, the following can be released:
 - Carbon monoxide (CO)
 - Under certain fire conditions, traces of other toxic gases cannot be excluded.
- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Ensure adequate ventilation
 - Particular danger of slipping on leaked/spilled product.
 - Use personal protective equipment as required.
- **6.2 Environmental precautions**
 - Avoid release to the environment.
 - Prevent from spreading (e.g. by damming-in or oil barriers).
- **6.3 Methods and material for containment and cleaning up**
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 - Remove from the water surface (e.g. skim or suck off).
 - Send for recovery or disposal in suitable receptacles.
 - Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Avoid the formation of oil haze.
 - Open and handle receptacle with care.
 - Avoid breathing mist/vapours/spray.
 - Avoid contact with the eyes and skin.
 - Keep out of reach of children.
- **Information about fire - and explosion protection:**
 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **7.2 Conditions for safe storage, including any incompatibilities**

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- **Requirements to be met by storerooms and receptacles:**
Store in cool, dry conditions in well sealed receptacles.
Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidising agents.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **8.2 Exposure controls**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Avoid contact with the eyes.
Avoid close or long term contact with the skin.
Avoid breathing mist/vapours/spray.
- **Respiratory protection:**
Not required under normal conditions of use.
Use suitable respiratory protective device when aerosol or mist is formed.
- **Protection of hands:**
Gloves are advised for repeated or prolonged contact.
Wear protective gloves to handle contents of damaged or leaking units.
- **Eye protection:** Follow relevant national guidelines concerning the use of protective eyewear.
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:** No special requirements.
- **Risk management measures:** No special requirements.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

- **Appearance**

Form:	Liquid
Colour:	Amber coloured
- **Odour:** Petroleum-like
- **Odour threshold:** Not determined.
- **pH-value:** Not determined.
- **Melting point/freezing point:** Not determined.
- **Initial boiling point and boiling range:** >100 °C (>212 °F)
- **Flash point:** >100 °C (>212 °F)

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· Flammability (solid, gas):	Not applicable.
· Auto/Self-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
· Oxidising properties	Not determined.
· Vapour pressure:	Not determined.
· Density:	
Relative density:	<1
Vapour density:	Not determined.
Evaporation rate:	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity	
Dynamic:	Not determined.
Kinematic at 40 °C (104 °F):	45 mm ² /s
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** The product is non-reactive under normal conditions of use, storage and transport.
- **10.2 Chemical stability** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong oxidising agents.
- **10.4 Conditions to avoid** Sources of ignition: sparks, open flame, incompatible materials
- **10.5 Incompatible materials** Oxidisers
- **10.6 Hazardous decomposition products**
Carbon monoxide and carbon dioxide
Hydrocarbons
Phosphorus oxides (e.g. P₂O₅)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:** None.

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- **Primary irritant effect**
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **Probable routes of exposure:**

Ingestion.
Eye contact.
Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

398141-87-2 Thiophene, tetrahydro-, 1,1-dioxide, 3-(C9-11 branched alkyloxy) derivs., C10-rich

LC50	3,3 mg/l (Cyprinodon variegatus)
	4,2 mg/l (pimephales promelas)

- **12.2 Persistence and degradability**
The product is partially biodegradable. Significant residuals remain.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Avoid release to the environment.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Contact waste processors for recycling information.
Delivery of waste oil to officially authorized collectors only.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|--|-----------------|
| · 14.1 UN-Number | |
| · DOT, ADR, IMDG, IATA | Not Regulated |
| · 14.2 UN proper shipping name | |
| · DOT, ADR, IMDG, IATA | Not Regulated |
| · 14.3 Transport hazard class(es) | |
| · DOT, ADR, IMDG, IATA | |
| · Class | Not Regulated |
| · 14.4 Packing group | |
| · DOT, ADR, IMDG, IATA | Not Regulated |
| · 14.5 Environmental hazards: | |
| · Marine pollutant: | No |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- United States (USA)
- SARA
- **Section 355 (extremely hazardous substances):**
- None of the ingredients are listed.
- **Section 313 (Specific toxic chemical listings):**
- None of the ingredients are listed.
- **TSCA (Toxic Substances Control Act):**
- All ingredients are listed or exempt.
- **EPA (Environmental Protection Agency)**
- None of the ingredients are listed.
- **IARC (International Agency for Research on Cancer)**
- None of the ingredients are listed.
- **Canadian Domestic Substances List (DSL)**
- All ingredients are listed or exempt.

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- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients are listed.
- **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H411 Toxic to aquatic life with long lasting effects.

- **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bio-accumulable, Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Skin Sens. 1B: Skin sensitisation – Category 1B
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

- **Sources**

Website, European Chemicals Agency (echa.europa.eu)
 Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
 Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
 Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
 Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.
 Safety Data Sheets, Individual Manufacturers

The manufacturer believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. No warranty of fitness, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or process. Further, since the conditions and

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