



Gear Oils



Elixir Full Synthetic GL-5 75W-90 - Elixir Tri-Vis Plus+ MP Hypoid GL-5 75W-85W-140 - Limited Slip MP Hypoid LS GL-5 Gear Oil Hypoid Gear Multi-Purpose GL-5 Lubricant SMG Lubricant GL-1 - Limited Slip Axle Concentrate



AMALIE® Elixir Full Synthetic GL-5 75W-90 is the ultimate gear oil system providing maximum protection for all gear sets as well as helping to improve fuel economy while promoting longer gear life. This formulation is rated MT-1 and is excellent for manual transmissions requiring a GL-4 rated synchromesh additive system. The special additive system is protective of blonde metals and is friction modified for smooth shifting. AMALIE Elixir Full Synthetic GL-5 75W-90 is a 100% synthetic base oil product coupled with a robust additive system and an improved viscosity modifier. It provides a high viscosity index, low pour-point, reduced friction, fuel savings, better low temperature start-up protection and longer life than most conventional gear oils. AMALIE Elixir Full Synthetic GL-5 75W-90 is formulated with limited slip additives eliminating the need for the addition of aftermarket limited slip additive. This superior gear oil is formulated to meet the requirements of the American Petroleum Institute's (API) Service Classification GL-5 and MT-1; MIL-PRF-2105E; SAE J-2360: Dana Corp. (including Eaton Axles); Eaton 750,000 mile warranty coverage and 500,000 mile oil drain intervals capabilities; General Electric D 50E9C; (P&H) 474; Mack Truck GO-J Plus; Arvin Meritor, and Rockwell Axles including the International 0-76-E.

AMALIE® Elixir Tri-Vis Plus GL-5 75W-85W-140 is a superior, high performance, full synthetic, multi-purpose automotive gear lubricant formulated to excel in severe-duty applications. Because of its robust additive system, the use of 100% synthetic base stocks and its scientifically improved shear-stable viscosity modifier it will give extended-service life protection in a multitude of severe duty applications and operating conditions including cold weather. The advanced engineering of this formula will provide excellent protection against wear, corrosion and thermal oxidative degradation and is formulated with limited slip additives eliminating the need for addition of aftermarket limited slip additive. Its unique EP package provides the best in protection against pitting, scoring and wear and is formulated to meet the requirements of the American Petroleum Institute's (API) Service Classification GL-5 and MT-1; MIL-PRF-2105E; SAE J-2360: Dana Corp. and Mack Truck GO-J.

AMALIE® Hypoid Gear Multi-Purpose GL-5 is a premium gear lubricant for light and heavy duty axles and heavy duty non-synchronized transmissions. Features include excellent thermal and oxidation stability, compatibility with seal materials, proven heavy duty transmission performance, superior copper corrosion protection, demulsibility and foam suppression, and superior storage stability. In addition these GL-5 gear oils have exceptional EP protection and durability. With all this it is also the most price/performance competitive system used in the industry; it exceeds the performance needs of OEM final drive builders calling out API GL-5, MT-1, Mil-Prf-2105E, PG-2, and Mack GO-J.

AMALIE® Limited Slip MP Hypoid LS GL-5 Gear Oil meets the API GL-5 hypoid gear performance classification, and the features listed for hypoid gear multipurpose plus it contains limited-slip (LS) chemistry to prevent/reduce differential chatter as well as being formulated from the highest quality base oils and a new and improved GL-5 additive system.

AMALIE® SMG Lubricant GL-1 is a high quality straight mineral gear oil formulated to meet the API GL-1 performance classification and to satisfy the basic gear oil demands of many high-performance over-the-road transmissions as well as many older transmission units.

AMALIE® Limited Slip Axle Concentrate is a high-performance, highly concentrated gear oil supplement and friction modifier additive package that may be used to help treat limited-slip axles that have chatter problems.

TYPICAL INSPECTION DATA

	API Gravity	Flash Point,C.	Viscosity, cSt.		VI	Brookfield Viscosity, cP.			Pour Point,C
			@100°C	@40°C		@-40C	@-26C	@-12C	
Elixir Full Synthetic GL-5									
75W-90	34.0	210	14.5	80.0	180	<120,000	-	-	-45
Tri-Vis Plus+ MP Hypoid GL-5									
75W-85W-140	34.0	200	27.0	175.0	180	<120,000	-	-	-45
Limited Slip MP Hypoid LS GL-5									
80W-90	27.5	230	14.90	148.0	100	-	<150,000	-	-36
Hypoid Gear Multi-Purpose GL-5									
75W	28.0	190	5.5	32.0	110	<150,000	-	-	-45
75W-90	27.6	200	14.00	120.0	116	<150,000	-	-	-45
80W-90	27.6	230	14.20	142.0	97	-	<150,000	-	-30
85W-140	25.5	250	26.20	352.0	98	-	-	<150,000	-24
SMG Lubricant GL-1									
85W-90	29.0	230	-	-	-	-	-	<150,000	-
140	31.0	250	145.00	300.0	460	-	-	-	-
250	27.0	250	-	-	-	-	-	-	-
Limited Slip Axle Concentrate	22.3	240	6.00	30.0	132	-	-	-	-

PERFORMANCE APPLICATION CHART

SPECIFICATIONS	Elixir Full Synthetic GL-5	Tri-Vis Plus+ MP Hypoid GL-5	Limited Slip MP Hypoid LS GL-5	Hypoid Gear MP GL-5	SMG Lubricant GL-1	Limit Slip Axle Concentrate
API:						
GL-1	√	√	√	√	√	-
GL-2/3	√	√	√	√	-	-
GL-4	√	√	√	√	-	-
GL-5	√	√	√	√	-	-
MT-1	√	√	√	√		
Mil-PRF-2105E	√	√	√	√	-	-
Mack GO-J	√	√	√	√	-	-
Mack GO-J Plus	√	-	-	-	-	-
Limited Slip:						
M2C119A	√	-	√	-	-	*See below
M2C154A	√	-	√	-	-	*See below
Outboards and Stern Drives	√	√	√	√	-	-

* Add 2 ounces per quart needed to passenger car LS axle for noise reduction
(Add 4 ounces per quart needed for heavy duty truck axles)



AMALIE Oil Company
Safety data sheet
according to 1907/2006/EC (REACH),
1272/2008/EC (CLP), and GHS

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

- **1.1 Product identifier**
- **Trade name:** AMALIE MP HYP LS GL-5 80W90
- **Application of the substance / the preparation** Lubricating Oils
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
AMALIE OIL COMPANY
Made in U.S.A.

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.
- **Information concerning particular hazards for human and environment:**
The product does not have to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

- **2.2 Label elements**
- **Labeling according to Regulation (EC) No 1272/2008** N/A
- **Hazard pictograms** N/A
- **Signal word** N/A
- **Hazard statements** N/A
- **Hazard description:**
- **WHMIS-symbols:** Not hazardous under WHMIS.

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· **HMIS Long Term Health Hazard Substances**

None of the ingredients is listed.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **3.2 Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 64741-88-4 EINECS: 265-090-8 Index number: 649-454-00-7	Distillates (petroleum), solvent-refined heavy paraffinic Carc. Cat. 2	80%
CAS: 64742-01-4 EINECS: 265-101-6 Index number: 649-459-00-4	Residual oils (petroleum), solvent-refined Carc. Cat. 2	11%

· **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.

For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**

· **General information:** No special measures required.

· **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 continues, 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**

No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **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.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Ensure adequate ventilation
 - Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
 - Do not allow to enter sewers/ surface or ground water.
 - 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).
 - Send for recovery or disposal in suitable receptacles.
 - Do not flush with water or aqueous cleansing agents
- **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.

7 Handling and storage

- **7.1 Precautions for safe handling** Avoid the formation of oil haze.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.

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- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **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.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **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.
- **Respiratory protection:**
Not necessary if room is well-ventilated.
Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**



Protective gloves

Oil resistant gloves

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Eye protection:**



Safety glasses

Goggles recommended during refilling

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9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Oily
Colour:	Amber coloured
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not determined.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· Flash point: 210°C (410°F)

· Flammability (solid, gaseous): Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· Self-igniting: Product is not self-igniting.

· Danger of explosion: Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure: Not determined.

· Density at 20°C:	0,89 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with water: Not miscible or difficult to mix.

· Partition coefficient (n-octanol/water) at 20°C: > 2,0 log POW (Estimate)

· **Viscosity:**

Viscosity Index:	105
Kinematic at 40°C:	140 cSt (15 cSt @ 100°C)

· **9.2 Other information** No further relevant information available.

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10 Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong oxidizing agents.
- **10.4 Conditions to avoid** Store away from oxidizing agents.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Possible in traces.
Nitrogen oxides
Sulphur oxides (SO_x)

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

Oral LD50 >2000 mg/kg (rat)
Dermal LD50 >2000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Slight irritant effect on skin and mucous membranes.
- **on the eye:** Slight irritant effect on eyes.
- **Sensitization:** Sensitizing effect by skin contact is possible by prolonged exposure.
- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** The material is harmful to the environment.
- **12.2 Persistence and degradability** Not easily biodegradable
- **12.3 Bioaccumulative potential** May be accumulated in organism
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**

· **General notes:**

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Danger to drinking water if even extremely small quantities leak into the ground.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 Can be reused after reprocessing.
 Delivery of waste oil to officially authorized collectors only.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|-----------------|
| · 14.1 UN-Number | |
| · DOT, ADN, IMDG, IATA | N/A |
| · 14.2 UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | N/A |
| · 14.3 Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | N/A |
| · 14.4 Packing group | |
| · DOT, ADR, IMDG, IATA | N/A |
| · 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 MARPOL73/78 and the IBC Code | Not applicable. |
| · UN "Model Regulation": | - |

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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 is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Canada**

· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

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· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

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

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.

· **Abbreviations and acronyms :**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (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 Harmonized System of Classification and Labeling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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This document was authored and reviewed by the technical and scientific staff at ChemTel Inc. Descriptions, classifications and calculations are based upon data provided by manufacturer and augmented by published data in conjunction with expert analysis by degreed scientists.

