



Universal Gear Oil API GL-4 / GL-5 75W-90

СПЕЦИФИКАЦИИ

SAE: 75W-90

API: GL-4 / GL-5

ДОПУСКИ И СООТВЕТСТВИЯ

MACK GO-J MAN 3343 Typ S MAN 341 E-3/Z-2 MAN 342 M-3 MB 235.0 MB 235.6

MB 235.8 SCANIA STO 1:0 VOLVO 97310, 1273.10, 1273.12

ZF TE-ML 01, 02B, 05A, 07A, 08, 12A, 16B, C, D,F, 17B, 19B MT-1 MIL-L-2105D PRF-2105E

СВОЙСТВА

- Hervorragende EP-Eigenschaften;
- Extreme Verschleißfestigkeit;
- Sehr gute Beständigkeit gegen Oxidation;
- Hervorragendes Viskositäts-Temperatur-Verhalten;
- Hohe Druckfestigkeit;
- Schutz gegen Korrosion;
- Verhindert Schäumen;
- Neutral gegenüber Dichtungsmaterialien.

ЭФФЕКТЫ

- Verminderter Kraftstoffverbrauch;
- Optimale Betriebseigenschaften;
- Verlängerte Lebensdauer;
- Exzellentes Kaltstartverhalten, bis -45 °C;
- Ganzjahresbetrieb;
- Universelle Anwendung.

УТИЛИЗАЦИЯ

- Altöl Wolver Universal Gear Oil 75W-90 gehört zum Abfall zweiter Kategorie und unterliegt Entsorgung in speziell dafür vorgesehenen Bereichen.

ОПИСАНИЕ

Wolver Universal Gear Oil 75W-90 ist ein universelles, vollsynthetisches, leichtfließendes Getriebeöl. Es enthält spezielle EP-Additive zur Verwendung in Hochleistungsschaltgetrieben und anderen Übertragungen, wo EP-Eigenschaften erforderlich sind.

Wolver Universal Gear Oil 75W-90 - Dank der speziellen Kombination von Additiven bietet dieses Öl einen hohen Arbeitswirkungsgrad des Getriebes. Es hat eine ungewöhnlich hohe Beständigkeit gegen Oxidation und gegen Temperaturschwankungen.

Wolver Universal Gear Oil 75W-90 ist anwendbar bei allen Fahrzeugen, einschließlich kommerziellen, in allen Antriebssystemen, synchronisierten und nicht synchronisierten Schaltgetrieben und Achsantrieben mit Hypoidverzahnung oder ohne, und Verteiler in Übereinstimmung mit den Empfehlungen des Geräteherstellers.

Anwendung

- Mechanische CPR und Differentiale;
- PKW und Lastwagen, Lieferwagen und Fahrzeuge mit Allradantrieb;
- Landwirtschafts-, Bau- und Arbeitsmaschinen.



Multigrade Hypoid Gear Oil GL-5 SAE 80W-90

СПЕЦИФИКАЦИИ

Двигатель:	бензиновый, дизельный
SAE:	80W-90
API:	GL-5

ДОПУСКИ И СООТВЕТСТВИЯ

MB 235.0 MB 235.6 VOLVO 97310 VOLVO 97313 CLARK FORM ALC-1 5M Rev.7-80 KE
TLC-25 3M GAC 4-78 CS 3000 B EATON BULLETIN 6007, 2052, 2053 FORD M-2C-9022 A
FORD SM-2C-1011-A FORD EST-M2C-108C FULLER FORM 121 JI CASE MS 1316
JOHN DEERE JDM J 11D/E KOMATSU DRESSER B22-0003 KOMATSU DRESSER B22-0005
MACK GO-G MAN 342 N / 342 Typ M2 (160.000 km.) ROCKWELL INTERNATIONAL 0-76
TEREX EEMS 19003 VME AMERICAS EEMS 19003 F ZF TE-ML 05A, 07A,08,12E,16B/C/D,17B,19B,21A
DAF Renault

СВОЙСТВА

- Превосходная защита от износа;
- Высокая несущая способность масляной пленки;
- Превосходная устойчивость к окислению;
- Стабильная вязкость при высоких температурах;
- Нейтрально по отношению к уплотнительным материалам;
- Обладает хорошими противопенными свойствами;

ЭФФЕКТЫ

- Оптимальные рабочие свойства;
- Уменьшает износ и ходовые шумы;
- Универсальность;
- Защита от износа в широком диапазоне нагрузок;
- Круглогодичное использование.

УТИЛИЗАЦИЯ

- Отработанное масло Wolver Gear Oil GL-5 SAE 80W-90 относится к отходам 2-ой категории и подлежит утилизации в специально отведенных местах.

ТИПИЧНЫЕ ХАРАКТЕРИСТИКИ

Кинематическая вязкость при 100 °C, mm ² /s	15.4
Индекс вязкости, -	89
Температура застывания, °C	-28
Кислотное число, mgKOH/g	0.7
Температура вспышки, °C	228
Плотность при 15,6 °C, kg/m ³	899

ОПИСАНИЕ

Wolver Gear Oil GL-5 SAE 80W-90 гипоидное трансмиссионное масло для механических коробок передач, изготовленное из высококачественных базовых масел с добавлением современного комплекса присадок.

Wolver Gear Oil GL-5 SAE 80W-90 всепогодное гипоидное трансмиссионное масло с вязкостью SAE 80W-90. Может использоваться как летом, так и в зимний период. Универсальный характер масла снижает опасность ошибок в применении и упрощает хранение на складе.

Благодаря специально подобранным присадкам, обеспечиваются такие показатели как: повышенная стойкость масляной пленки при высоких температурах, стойкость к высоким нагрузкам, хорошая термостойкость и стойкость к окислению, эффективная работа при низких температурах, предотвращение образования отложений и повышение вязкости во время эксплуатации.

Применение

- Дифференциалы ведущих мостов согласно API GL 5;
- Тяжелонагруженные механические КПП согласно API GL 5;
- Раздаточная коробка, промежуточный редуктор, вспомогательная трансмиссия автомобилей и рабочих машин.

	<p style="text-align: center;">ALCO QUALITY ASSURANCE LABORATORY TEST REPORT</p> <p style="text-align: center;">Accreditation No: AZS ISO/IEC 17025:2020/AZ 01.0571.01.21</p>	
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Company: ALCO LLC
3, Vali Mammadov st., Sabail dist.
AZ1095, Baku, Azerbaijan

Certificate No.: 2024567
Date of issue: 16/04/2024

Test sample

Product: AVTOIL TAD 17 85W90 GL-5
Batch number: 2405567
Tank ID: T41.2

Manufacture date: 16/04/2024
Date of sampling: 16/04/2024
Date of analysis: 16/04/2024

Test result

Parameters	Unit	Test method	Limit	Test result	Conclusion
Appearance	-	Visual	Bright & Clear	Bright & Clear	Pass
Kinematic viscosity at 100 °C	mm ² /s	ASTM D445	Min. 17.50	17.67	Pass
Viscosity Index	-	ASTM D1500	Min. 90	97	Pass
Water content	%	ASTM D95	Max. 0.05	None	Pass
Flash Point, COC	°C	ASTM D92	Min. 200	226	Pass
Pour Point	°C	ASTM D97	Max. -30	-33	Pass
Color	-	ASTM D1500	Test & Report	4.4	Pass
Density at 15 °C	g/cm ³	ASTM D4052	Test & Report	0.8945	Pass

ALCO QUALITY ASSURANCE LABORATORY accredited by AzAK for AZS ISO/IEC 17025:2020 at test laboratory.

Shelf life: 5 years from the date of manufacture of the product if proper storage conditions are followed.

This product meets the specification set out in its product data sheet (PDS) and has been manufactured in a facility fully complying with the requirements of Integrated Management System standards.

Notes & Instructions:

- Tests conducted according to International Standard Test Methods are routinely verified to be in compliance with the latest published versions. Minor changes may be made where they have no material impact on test results and are necessitated by reasons such as safety, environmental standards and method effectiveness.
- This certificate is only valid in its entirety.
- This certificate shall not be reproduced except in full, without the written approval of the laboratory.

Authorised singnatory



Allahverdiyeva Aytan
Head of Laboratory



Isgandarli Nazrin
Lead Chemical Engineer





8806

CHEMPIOIL SYNCRO GLX 75W-140

Всесезонное трансмиссионное полностью синтетическое масло последнего поколения (содержит PAO) специально созданное для смазки всех типов дифференциалов, в том числе и для дифференциалов повышенного трения, где требуется масло "Limited Slip Oil API GL-5". Разработано для гипоидных, конических и спиральных передач.

Свойства продукта:

- Уникальная высоковязкая PAO основа высочайшего качества, сохраняющая свои несущие свойства в широком диапазоне температур, в сочетании с пакетом присадок последнего поколения, обеспечивают непревзойдённые антифрикционные свойства, что обеспечивает существенную экономию топлива;
- За счёт своего уникального состава обеспечивает непревзойдённые противоизносные и противозадирные свойства, что значительно продлевает ресурс техники на всех, даже самых экстремальных, режимах работы в широком диапазоне температур окружающей среды. Обладает повышенной стойкостью масляной пленки к экстремальным давлениям;
- Обеспечивает отличные низкотемпературные свойства, что обеспечивает легкий запуск и надежное смазывание узлов трансмиссии при любых температурах окружающей среды (до -45 °C) и при любых условиях эксплуатации;
- Обладает повышенной термоокислительной стабильностью и превосходной стойкостью к высокотемпературной термической деградации, что позволяет увеличить интервал замены масла и снизить затраты на обслуживание техники;
- Защищает от коррозии металлические детали в процессе работы и в нерабочем состоянии;

- Обеспечивает превосходную совместимость с материалами уплотнений, предотвращает их разбухание, затвердевание и усадку, что позволяет снизить затраты на запчасти и предотвращает утечки;
- Снижает шум.

Рекомендовано для трансмиссий спортивных и полноприводных легковых автомобилей и трансмиссий коммерческой шоссейной (магистральные тягачи, автобусы и т.д.), внедорожной (строительная, горнодобывающая, сельскохозяйственная) и специальной техники европейских, американских и азиатских производителей, где необходим уровень эксплуатационных свойств GL-5 LS.

Соблюдайте предписания производителя, указанные в руководстве по эксплуатации.

Продукт имеет допуски / соответствует спецификациям / продуктам:

Specifications:

SAE 75W-140

Approval:

Recommendation:

API GL-5 LS (Limited Slip)

MIL L 2105 D

MAN 342

SCANIA STO 1:0

Упаковка (арт.нр.)

1L (CH8806-1)

20L (CH8806-20)

60L (CH8806-60)

208L (CH8806-DR)

1000L (CH8806-IBC)

ТОВ «СП ЮКОЙЛ». Завод технічних олів.
Україна, 09100, Київська обл., Білоцерківський р-н, місто Біла Церква, вул.Пулюя Івана, будинок 48-А
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Телефон ВТК: +38 (061) 222 80 25
ЄДРПОУ 31852954



Випробувальна лабораторія ТОВ «СП ЮКОЙЛ» атестована на проведення вимірювань показників якості нафтопродуктів, технічних рідин та мастильних матеріалів. Свідоцтво про визнання технічної компетентності № АВ 43-22 від 22.11.2022р. видане ДП «ЗАПОРІЖЖЯСТАНДАРТМЕТРОЛОГІЯ», чинне до 16.11.2024 р

Паспорт якості фасованої продукції №13086.05.01.1

Мастило YUKO Літол-24

ТУ У 20.5-31852954-122:2023

Виробник: ТОВ «СП ЮКОЙЛ»
Розфасовано: ТОВ «СП ЮКОЙЛ» за ТУ У 23.2-31852954-027:2006
Клас NLGI **NLGI 3**
Клас експлуатаційних властивостей: **K3K-40, ISO-L-XDCEA3**

Дата виготовлення: Березень 2024р.
Тара: відро 20л жерсть
Номер партії: 13086.29.03.24.02.

Ф.5 СТП014

Назва показника	Вимоги НД	Фактично	Метод випробувань
Зовнішній вигляд	Однорідна мазь гладкої структури від світло-жовтого до темно-коричневого кольору	Однорідна мазь гладкої структури жовтого кольору	ГСТУ 38.001 або п. 7.3 цих ТУ
Температура крапання, °С, не нижче	140	148	ГОСТ 6793 або ASTM D2265
Пенетрація при 25°С з перемішуванням, 0,1 мм	230-290	240	ГОСТ 5346, метод Б або ASTM D217
В'язкість ефективна при мінус 20°С та середньому градієнті швидкості деформації 10 с-1, Па·с, не більше	1 500	680	ГОСТ 7163 або ASTM D1092
Колоїдна стабільність: масова частка оливи, відпресованої від мастила, %, не більше	15,0	5,60	ГОСТ 7142
Межа міцності на зсув при 50°С, Па, не менше	150	266	ГОСТ 7143 метод Б
Випарність, %, не більше	5,0	0,48	ГОСТ 9566 з доп. за п. 7.4 цих ТУ
Корозійний вплив на пластині зі сталі	Витримує	Витримує	ГОСТ 9.080
Трибологічні характеристики на чотирикульковій машині при температурі (20 ± 5) °С: - навантаження зварювання (Рзв), Н, не менше	1 381	1 381	ГОСТ 9490 або ASTM D2596

Паспорт якості дійсний тільки за наявності печатки.

Висновок: якість продукції відповідає вимогам ТУ У 20.5-31852954-122:2023 і ТУ У 23.2-31852954-027:2006

Гарантійний термін зберігання - 5 років
М. П.

Начальник ВТК

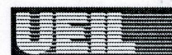


Анна ЛАРЧЕНКО

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ЄДРПОУ 31852954

YUKO

YUKO-є зареєстрованою торговою маркою ТОВ «СП ЮКОЙЛ»

Випробувальна лабораторія ТОВ «СП ЮКОЙЛ» атестована на проведення вимірювань показників якості нафтопродуктів, технічних рідин та мастильних матеріалів.
Свідоцтво про визнання технічної компетентності № АВ-ЗП 50-24 від 31.10.2024 р. видане ДП "ДНІПРОСТАНДАРТМЕТРОЛОГІЯ", чинне до 31.10.2027 р.

Паспорт якості фасованої продукції №08058.01.01.1 Мастило YUKO LITOPLEX EP (NLGI 00)

Виробник: ТОВ «СП ЮКОЙЛ» за ТУ У 20.5-31852954-068:2021
Розфасовано: ТОВ «СП ЮКОЙЛ» за ТУ У 23.2-31852954-027:2006
Клас NLGI **NLGI 00**
Клас експлуатаційних властивостей: KP00P-30; ISO-L-XBEBB 00



Дата виготовлення: Лютий 2025р.
Тара: відро 20л жерсть; об'єм партії 33 шт.
Номер партії: 08058.18.02.25.01.

Ф.5 СТП014

Назва показника	Вимоги НД	Фактично	Метод випробувань
Зовнішній вигляд	Однорідна мазь гладкої структури	Однорідна мазь гладкої структури синього кольору	ГСТУ 38.001 або п. 6.3 цих ТУ
Пенетрація при 25°C з перемішуванням, 0,1 мм	400-430	430	ГОСТ 5346, метод Б або ASTM D217
В'язкість ефективна при мінус 20°C та середньому градієнті швидкості деформації 10 с ⁻¹ , Па·с, не більше	1 200	635	ГОСТ 7163 або ASTM D1092
Межа міцності на зсув при температурі 50°C, Па, не більше	700	25	ГОСТ 7143 метод Б
Випарність, %, не більше	2	0,84	ГОСТ 9566 з доп. за п. 6.4 цих ТУ
Корозійний вплив на метали	Витримує	Витримує	ГОСТ 9.080 з доп. за п. 6.5 цих ТУ
Трибологічні характеристики на 4-х кульковій машині при температурі (20±5)°C:			ГОСТ 9490 або ASTM D2596
- навантаження зварювання (Рзв), Н, не менше	3 283	3 283	
- критичне навантаження (Рк), Н, не менше	980	1 039	
- індекс задиру (Із), Н, не менше	440	490	
Стійкість до окислення, мг КОН/г, не більше	2	0,60	ГОСТ 5734
Вміст води	Відсутність	Відсутність	ГОСТ 2477 або ASTM D128
Масова частка механічних домішок, %, не більше	0,05	0,032	ГОСТ 6479 або ASTM D128

Паспорт якості дійсний тільки за наявності печатки.

Висновок: якість продукції відповідає вимогам нормативної документації

Гарантійний термін зберігання - 5 років



Начальник ВТК

Юлія ЄВТУШЕНКО



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 1 of 16
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1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier	
Mixture name	Brake fluid DOT - 4
Trade name	Brake fluid DOT - 4
Identified uses	Brake fluid for all kind of trucks and passenger cars.
Uses advised against	Any other use.
Manufacturer	Cherkasy Autochemistry Plant LLC 18003, Ukraine, Cherkasy Vyacheslava Chornovola, 118, PO Box 729 tel/fax: +38 (0472) 64-61-60 e-mail: site@vamp.ua website: www.vamp.ua
1.4 Emergency telephone number	
112 (Please note that emergency numbers may vary depending upon the country of delivery though 112 remains valid as universal number)	


2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture	
Classification according to Regulation (EC) No 1272/2008 (CLP)	Additional information
Acute toxicity, Category 4, oral; Specific Target Organ Toxicity (repeated exp.), Category 2; Affected organs: kidney Route of exposure: Oral	H302: Harmful if swallowed. H373: May cause damage to organs through prolonged or repeated exposure Full text of P- H- phrases see section 16
Human Health effects	
Inhalation	Slight irritation in the upper respiratory tract or bothersome effect;
Eyes	Slight irritation.
Skin	Slight irritation.
Swallowing	Dose-dependent absorptive effects. Nausea, stomachache, lethargy, drowsiness.
2.2 Label elements	



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 2 of 16
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Product identifier	1,2-Ethanediol (Index # 603-027-00-1); 2,2'-oxydiethanol (Index # 603-140-00-6).
Hazard pictograms	
Signal word	Warning
Hazard statements	H302: Harmful if swallowed. H373: May cause damage to organs through prolonged or repeated exposure
Precautionary statements	P260: Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash with plenty of water and soap thoroughly after handling. P270 Do not eat, drink or smoke when using this product P301+P312+P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. rinse mouth. P314: Get medical advice/attention if you feel unwell. P501 Dispose of contents/ container in accordance with local regulations
Additional information	None
2.3 Other hazards	
The substances in mixture do not meet the criteria for PBT or vPvB according to Annex XIII of Regulation (EC) No.1907/2006 (REACH). Most of substances in mixture are combustible, difficult to ignite.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures (Hazardous ingredients and/or with relevant occupational exposure limits)

Chemical name	EC #	CAS #	Concentration, range %	Classification	Index #	Reach reg #
2,2'-oxydiethanol	203-872-2	111-46-6	≤90	Acute Toxicity, Cat. 4, Ingestion; H302	603-140-00-6-	01-2119457857-21



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 3 of 16
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				STOT – rep. exp. Cat. 2; H373		
1,2-Ethanediol	203-473-3	107-21-1	>10	Acute Toxicity, Cat. 4, Ingestion; H302 Stot.rep., Cat. 2; H373	603-027-00-1	01-2119456816-28
2-aminoethanol	205-483-3	141-43-5	0,02	Acute Tox. 4 H302, H312, H332 Skin corrosion Cat. 1B; H314 Serious Eye Damage Cat 1; H318 Hazardous to the Aquatic Env. Chronic Cat. 3; H412 STOT SE 3; H335: C ≥ 5 %	603-030-00-8	-

The mixture does not contain other additives in quantities that could affect product's labelling and classification according to CLP.

4. FIRST AID MEASURES

4.1 Description of first aid measures	
In case of inhalation:	Inhalation of product is not expected. Keep patient calm, remove to fresh air, seek medical attention.
In case of eye contact:	Wash affected eyes for at least 15 minutes under running water with eyelids held open. Consult ophthalmologist if irritation persists.
In case of skin contact:	Wash affected area thoroughly with soap and water.
In case of ingestion:	Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.
4.2 Most important symptoms and effects, both acute and delayed	
In case of inhalation	Headache, dizziness, weakness. Due to the low vapor pressure under normal conditions, exposure to vapors is only toxicologically relevant when handling heated mixture.
In case of eye contact	slightly irritating effect on mucous membranes.



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 4 of 16
------------------	--------------	-----------------------	--------------

In case of skin contact	Slight irritation, redness, edema.
In case of ingestion	Headache, dizziness, weakness, vomiting, nausea, diarrhea, in case of severe poisoning: fainting, convulsions, damage to the kidneys.
Information to physician and first aider.	The risk of life-threatening poisoning should generally only exist after ingestion or very massive inhalation of aerosols. Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote
First aid arsenal	Universal medical kit with a set of drugs (in consultation with the medical department of the enterprise).
4.3 Indication of any immediate medical attention and special treatment needed	
Immediate medical attention is not usually expected.	

5. FIREFIGHTING MEASURES

5.1 Extinguishing media	
Suitable extinguishing media	Water spray, dry powder, alcohol-resistant foam, carbon dioxide
Unsuitable extinguishing media	Do not use direct water jets as water destroys the foam.
5.2 Special hazards arising from the substance or mixture	
Hazardous combustion products	Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and carbon dioxide and minor amounts of nitrous oxides.
5.3 Advice for firefighters	
Combustible product, ignites from open flame. Cool containers with water from distance. Wear full fire-resistant protective clothing and self-contained breathing apparatus with a full face-piece operated in positive pressure mode for confined or poorly ventilated spaces	
Further information: The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.	

6. ACCIDENTAL RELEASE MEASURES.

6.1. Personal precautions, protective equipment and emergency procedures	
6.1.1. For non-emergency personnel	Avoid contact with skin and eyes. Use personal protective clothing. Stop or contain leak at the source if safe to do so. Avoid direct contact with released



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 5 of 16
-------------------------	---------------------	------------------------------	---------------------

	<p>material. Stay upwind. Keep non-involved personnel away from the area of spillage. Alert emergency personnel.</p> <p>Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares).</p>
6.1.2. For emergency responders	<p>Body suit of chemically resistant and antistatic material. Work gloves providing adequate chemical resistance. Work helmet. Antistatic non-skid safety shoes or boots. Goggles if contact with eyes is possible. A half or full-face respirator with combined dust/organic vapor filter(s), or a Self-Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and fire presence.</p> <p>If release is accompanied with fire – see Section 5.3</p>
6.2 Environmental precautions	
<p>Do not empty into drains. Do not discharge into the subsoil/soil. Prevent product from entering soil, sewers, rivers, waterways or other bodies of water.</p> <p>Spills should be shielded with an earthen rampart.</p>	
6.3 Methods and material for containment and cleaning up	
<p>For large amounts: Pump off product. Dike the product and other contaminated materials to suitable corrosion resistant containers for recycle, recovery or safe disposal. The product can be absorbed with non-combustible materials e.g. sand and then collected. Flush the spill area with water.</p> <p>In case soil contamination in big quantities report to local authorities.</p> <p>For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).</p>	
6.4 Reference to other section	
<p>Information about personal precautions - see Section 8.</p> <p>Information about waste disposal - see Section 13.</p>	

7. HANDLING AND STORAGE

7.1 Precautions for safe handling	
General precautions for safe handling	<p>Use in well ventilated areas.</p> <p>Avoid contact with eyes.</p> <p>Avoid prolonged contact with skin.</p> <p>Avoid breathing fumes or vapors.</p>
Fire preventions	<p>No smoking at working area.</p> <p>Take precautionary measures against static discharges.</p>



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 6 of 16
------------------	--------------	-----------------------	--------------

	Take precautionary measures against static electricity such as ensuring all equipment is electrically grounded. Electrical devices must meet the specified temperature class. Temperature class: T2 (Auto ignition temperature >300 °C).
Aerosol and dust generation preventions	Avoid spraying and mist formation if used with equipment under pressure.
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 and remove contaminated clothing and protective equipment before entering eating areas.
Environmental precautions	Do not allow product to enter into surface water or drains.
7.2 Conditions for safe storage, including any incompatibilities	
Technical measures and storage conditions	Store indoors in a cool, dry, well-ventilated area, away from incompatible materials and heat at ambient temperature. Storage temperature: < 40 °C The stated storage temperature should be noted.
Packaging	aluminum, Stainless steel, High density polyethylene (HDPE), light-impervious
Incompatible materials	Oxidizing agents, strong bases and acids.
Requirements for storage rooms and vessels	Provide general ventilation. Protect from atmospheric humidity. Protect contents from the effects of light.
Need for use of stabilizers or antioxidants	No
7.3 Specific end use(s)	
None.	

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters					
Occupational exposure limits					
Limit value type (country of origin)	Substance name	CAS-No.	Monitoring procedures	Occupational exposure limit value	
				Long term mg/m ³	Short term mg/m ³



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 7 of 16
-------------------------	---------------------	------------------------------	---------------------

EU (OEL)	2-aminoethanol	141-43-5	Area Air Sampling	2,5	7,6
EU (OEL)	1,2-Ethanediol	107-21-1	-	LTEL TWA =52	STEL =104
Germany (DFG)	2,2'-oxydiethanol	111-46-6	-	LTEL TWA=44	STEL =176
DNEL/DMEL values:					
Substance name	Worker	Consumer	Exposure route	Exposure frequency	Remark
2-aminoethanol	DNEL = 1 mg/m ³	DNEL = 0.18 mg/m ³	inhalation	Long term	-
	DNEL = 3 mg/kg bw/day	DNEL = 1.5 mg/kg bw/day	dermal	Long term	-
	-	DNEL = 1.5 mg/kg bw/day	oral	Long term	-
1,2-Ethanediol	DNEL=35 mg/m ³	7 mg/m ³	inhalation	Long-term	-
	106 mg/kg bw/day	53 mg/kg bw/day	dermal	Long-term	-
	No hazard identified	No hazard identified	Eye	-	local effects
2,2'-oxydiethanol	43 mg/kg bw/day	21 mg/kg bw/day	dermal	Long term	Systemic effect
	44 mg/m ³	12 mg/m ³	inhalation	Long-term	systemic effects
	60 mg/m ³	12 mg/m ³	inhalation	Long-term	local effects
PNEC values:					
Substance name	Environmental compartment	Value		Assessment factor	Remark
2-aminoethanol	aqua (freshwater)	PNEC = 0.07 mg/L		10	-
	aqua (marine water)	PNEC = 0.007 mg/L		100	-
	sediment (freshwater)	PNEC = 0.357 mg/kg sediment dw		-	-
	sediment (marine water)	PNEC = 0.036 mg/kg sediment dw		-	-
1,2-Ethanediol	aqua (freshwater)	PNEC 10 mg/L		-	



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 8 of 16
-------------------------	---------------------	------------------------------	---------------------

	PNEC aqua (marine water)	PNEC 1 mg/L	-
	PNEC aqua (intermittent, freshwater)	PNEC 10 mg/L	-
2,2'-oxydiethanol	freshwater	PNEC 10 mg/L	-
	aqua (marine water)	PNEC 1 mg/L	-
	Sediment (freshwater) dw	PNEC = 20.9 mg/kg	-

8.2 Exposure controls

Occupational exposure controls

8.2.1. Appropriate engineering controls

Appropriate general ventilation should be sufficient.

8.2.2. Individual protection measures, such as personal protective equipment

Respiratory protection	Not needed during foreseen use. If fumes or mists are formed due to accident use respirator. Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapors of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)
Eye/face protection	If potential exists for splashing or mist formation, use tightly fitting safety goggles (e.g. EN 166)
Skin/body protection	Wear working protective gloves (EN 374). Wear regular work clothing.

8.2.3. Environmental exposure controls

Measures to prevent exposure	Emissions from wastewaters from work processes should be checked to ensure they comply with the requirements of environmental protection legislation.
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9. PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties

Physical state	Oily liquid
Colour	Light yellow
Odour	Almost odorless



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 9 of 16
------------------	--------------	-----------------------	--------------

Melting point/freezing point (°C)	- 35
Initial boiling point/range (°C)	230 244 (2,2'-oxydiethanol) , 197°C (1,2-ethandiol)
Flammability	nonflammable (GHS classification criteria for flammable liquids: no category (nonflammable) Flash point >93 °C)
Lower and upper explosion limit	Non explosive <u>2,2'-oxydiethanol</u> : Lower explosion limit: 1.7% by volume 75 g/m ³ Upper explosion limit:37% by volume 1635 g/m ³ <u>1,2- ethandiol</u> : Lower explosion limit: 3.2% by volume 80 g/m ³ Upper explosion limit: 43 - 51%(by vol. 1090 ... 1326 g/m ³ Lower explosion point: 109°C
Flash point (°C)	120°C 138 °C (2,2-oxydiethanol) 111°C (1,2- ethandiol) 91°C – closed cup (2-aminoethanol)
Auto-ignition temperature (°C)	No data available for mixture 372 °C (2,2-oxydiethanol) 410°C (1,2-(Ethandiol) 424 (2-aminoethanol)
Decomposition temperature (°C)	No data available for mixture.
pH	pH value 7,0 -11,5
Kinematic viscosity (cSt = mm²/c) at minus (30±1) °C	< 1800
Solubility	Miscible with water.
Partition coefficient n-Octanol/Water (log Po/w)	Does not apply to mixtures.
Vapour pressure (kPa)	No data available for mixture. 0.008hPa(2,2-oxydiethanol) 0.123 hPa at 25 °C(1,2- ethandiol)
Density and/or relative density	1,06
Relative vapour density	No data available for mixture
Particle characteristics	Not applicable
9.2 Other information	
9.2.1. Information with regard to physical hazard classes	None



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 10 of 16
------------------	--------------	-----------------------	---------------

9.2.2. Other safety characteristics	None
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10. STABILITY AND REACTIVITY

10.1 Reactivity	The substance can react dangerously with strong oxidizing agents
10.2 Chemical stability	The product is stable upon appropriate handling and storage conditions.
10.3 Possibility of hazardous reactions	oxidation in flame or excessive heat. Risk of explosion in contact with: perchloric acid
10.4 Conditions to avoid	Avoid heat, open flames, incompatible materials.
10.5 Incompatible materials	Oxidizing agents, bases and acids.
10.6 Hazardous decomposition products	Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and carbon dioxide and minor amounts of nitrous oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects.					
Toxicokinetics, metabolism and distribution					
<p>The main intake route for mixture at the workplace is via the respiratory tract. Due to the very low vapor pressure of the liquid under normal conditions, exposure to vapors is to be expected mainly on heating.</p> <p>The kidneys are considered to be a critical target organ of mixture components, even after repeated exposure. Cases of poisoning in humans show that easily acutely toxic doses can be absorbed in this way.</p>					
Acute toxicity		The mixture is classified as Acute toxicity, Category 4, oral; respectively classified substances are present in it. Data on substances is presented below.			
Substance name	Exposure route	Value	Exposure time period	Species	Method (as is, equivalent or similar)
2,2-oxydiethanol	oral	LD50 = 19600 mg/kg bw	-	rat	-
	dermal	LD50 = 13300 mg/kg bw	-	Rabbits	-
1,2-ethandiol	oral	LD50 = 4700mg/kg	-	rat	-



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 11 of 16
-------------------------	---------------------	------------------------------	----------------------

	dermal	LD50 = 10600 mg/kg	-	Rabbits	-
2-aminoethanol	oral	LD50 = 1089 mg/kg	single dose	rat	OECD Guideline 401
	inhalation	LC50 = 1300 mg/m ³	6 hours	rat	national standard method with acceptable restrictions
	dermal	LD50 = 2504 mg/kg	24 hours	rabbit	OECD Guideline 402
Skin corrosion/irritation		The mixture is not classified as skin corrosive or irritating. Data on substances presented below.			
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)	
2,2-oxydiethanol	No	After a single dermal application of 50 mg DEG/kg body weight to the skin about 10% of the dose was absorbed within 72 hours. In the case of impact on injured skin, higher exposures must be expected.	rats	-	
2-aminoethanol	Yes	Erythema score 3 not reversible Classified as Skin corr. 1B	rabbit	OECD Guideline 404	
Serious eye damage/irritation		The mixture is not classified as Serious eye damage/irritation as it contains the lowest concentration of the classified substance. Data on substance presented below			
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)	
2-aminoethanol	Yes	Irreversible effects on the eye Classified as Eye. Dam. 1.	Rabbit	OECD Guideline 405	
Respiratory or skin sensitization	The mixture is not classified as sensitizing as no respectively classified substances are present in it.				
Germ cell mutagenicity	The mixture is not classified as no respectively classified substances are present in it.				
Carcinogenicity	The mixture is not classified as carcinogen as no respectively classified substances are present in it. 2,2'-oxydiethanol NOAEL (carcinog.), oral, rat=1160 mg/kg bw/day				
Reproductive toxicity	The mixture is not classified as possessing reproductive toxicity as no respectively classified substances are present in it.				



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 12 of 16
-------------------------	---------------------	------------------------------	----------------------

Data on substances presented below.				
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)
2-aminoethanol	Yes	NOAEL = 1 000 mg/kg bw/day	rat	OECD Guideline 415
2,2'-oxydiethanol		NOAEL (effects on fertility), subacute, 3060mg/kg bw/day	oral, mouse	-
specific target organ toxicity — single exposure	The mixture is not classified for specific target organ toxicity — single exposure as no respectively classified substances are present in it.			
STOT-repeated exposure	The mixture is classified as STOT-repeated exposure, Category 2, oral (Affected organs: kidney Route of exposure: Oral;) respectively classified substances are present in it. Data on substances is presented below.			
Substance name	Exposure route	Result	Species	Method (as is, equivalent or similar)
2,2-oxydiethanol	oral	NOAEL = 300 mg/kg bw/day(98 days)	rats	System: urinary. Organ: kidney
2-aminoethanol	oral	NOAEL = 300 mg/kg bw/day 75 days	rat	
1,2-ethandiol	oral	NOAEL =150 mg/kg bw/day The kidneys were found to be the target organ at higher doses	rat	equivalent or similar to OECD Guideline 452
Aspiration hazard	The mixture is not classified for aspiration toxicity as no respectively classified substances are present in it.			
Adverse health effects and symptoms associated with exposure				
In case of inhalation	due to high concentrations of vapors/aerosol, slight irritation in the upper respiratory tract or bothersome effect; in extreme cases breathing difficulties and absorptive effects			
In case of eye contact	no or little irritation			
In case of skin contact	no significant irritation; systemic effects must be expected if there is extensive contact with damaged skin.			
In case of ingestion	hardly any irritation, dose-dependent absorptive effects.			



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 13 of 16
-------------------------	---------------------	------------------------------	----------------------

11.2 Information on other hazards	
Endocrine disrupting properties	Any of the ingredient of mixture has not been identified as having endocrine disrupting properties.

12. ECOLOGICAL INFORMATION

12.1 Toxicity:					
Due to all available data on environmental fate and aquatic toxicology the substance does not need to be classified according to EU GHS CLP. Data on substances presented below.					
Chemical name	Aquatic toxicity	Effect dose	Exposure time	Species	Method
diethylene glycol	Short-term toxicity to fish	LC50=75200 mg/L	96h	Fathead minnow (Pimephales promelas)	a flow-through study
	Long-term toxicity to fish	(ChV)7694 mg/L	30d	fish	QSAR EpiWin-Program ECOSAR v1.11
ethyleneglycol	Short-term toxicity to fish	LC50>72860 mg/L	96 h	Pimephales promelas	EPA 600/4-90/027
	Short-term toxicity to fish	LC50 =41000 mg/l	48 h	Crustaceans	-
2-aminoethanol	Acute toxicity to fish	LC50 = 280 mg/L	96 hours	Cyprinus carpio	Directive 92/69/EEC, C.1.
	Long-term toxicity to fish	NOEC = 1.24 mg/L	41 days	Oryzias latipes	OECD Guideline 210
	Acute toxicity to aquatic invertebrates	EC50 = 27.04 mg/L	48 hours	Daphnia magna	OECD Guideline 202
	Long-term toxicity to aquatic invertebrates	NOEC = 0.85 mg/L	21 day	Daphnia magna	OECD Guideline 202
	Toxicity to aquatic algae and cyanobacteria	NOEC = 1 mg/L	72 hours	Pseudokirchneriella subcapitata	OECD Guideline 201
	Toxicity to microorganisms	EC10 > 1 000 mg/L	30 min.	activated sludge	OECD Guideline 209
12.2 Persistence and degradability					
Abiotic Degradation					
No data available for mixture.					
Biodegradation					
Readily biodegradable (according to OECD criteria).					



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 14 of 16
------------------	--------------	-----------------------	---------------

1,2-ethandiol: After 10 days > 90 % degradation was determined. (OECD 301A) 2,2-oxydiethanol: meet the criteria in a carbon dioxide evolution test according to OECD 301B. % Degradation of test substance: 90 – 100% after 28d
12.3 Bioaccumulative potential
No data available for mixture .
12.4 Mobility in soil
Study scientifically unjustified (substance is readily biodegradable)
12.5 Results of PBT and vPvB assessment
The substances in mixture do not meet the criteria for PBT or vPvB.
12.6 Other adverse effects:
None

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	
Appropriate disposal / Product	Waste disposal should be in strict correspondence with local and national laws and regulations. Waste of the product is not regarded as hazardous according to Directive 2008/98/EC.
Waste codes according to EWC	none
Appropriate disposal /Packaging	Contaminated stainless steel empty containers should be properly cleaned and reused. Contaminated PE containers should be disposed as product or municipal waste.

14. TRANSPORT INFORMATION

The product is transported by railway (RID) and road (ADR) and waterways (ADN) Not subject to transport regulations.	
14.1 UN number	None
14.2 UN proper shipping name	None
14.3 Transport hazard class(es)	None
14.4. Packing group	None
14.5. Environmental hazards	Not considered as marine pollutant according to IMDG Code.
14.6. Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	This product is not transported in bulk and is out of the scope of Annex II of MARPOL 73/78.

15. REGULATORY INFORMATION



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 15 of 16
------------------	--------------	-----------------------	---------------

15.1 Safety, health and environmental regulations/legislation specific for the substance

None

15.2 Chemical Safety Assessment

Chemical safety assessment has not been carried for the mixture.

16. OTHER INFORMATION

Revision

SDS has been issued for the first time.

Abbreviations

OEL – occupational exposure limit
VLEP – valeurs limites d'exposition professionnelle- occupational exposure limit values
VLE - valeurs limites d'exposition- occupational exposure limit values
MAK - maximum workplace concentrations
MAC - maximum workplace concentrations
WEL- Workplace Exposure Limits
AK - Permissible average concentration
DNEL - derived no-effect level
PNEC - predicted no effect concentration
LD50 – lethal dose
EC50 – half maximal effective concentration
EC10 - half maximal effective concentration
NOEL - no observed effect level
NOEC - no observed effect concentration
NOAEL – no observed adverse effect level
PBT or vPvB - persistent, bioaccumulative and toxic or very persistent very bioaccumulative
STOT SE – Specific target organ toxicity – single exposure
STOT RE - Specific target organ toxicity – repeated exposure
AF – Assessment factor

Sources for data

Suppliers' SDS for 1.2-ethandiol
Suppliers' SDS for 2.2'- oxydiethanol
ECHA database on registered substances
GESTIS database on international limit values
Specification TU U 20.5-37439067-006:2019

Classification method

For the purpose of classification of mixture available data on all substances and additivity principle was used. For the purpose of not classification of mixture for flammable liquids class results of flash point tests for mixture components was used.

List of hazard statements and/or precautionary statements

H302: Harmful if swallowed.



Safety Data Sheet
According to the Regulation (EC) №1907/2006
Brake fluid
DOT -4

Date: 03.11.2022	Version: 2.0	Supersedes version: -	Page 16 of 16
-------------------------	---------------------	------------------------------	----------------------

H373: May cause damage to organs through prolonged or repeated exposure
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash with plenty of water and soap thoroughly after handling.
P270 Do not eat, drink or smoke when using this product
P301+P312+P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. rinse mouth.
P314: Get medical advice/attention if you feel unwell.
P501 Dispose of contents/ container in accordance with local regulations
All H- P-statements are mentioned in full in Section 2 of the SDS.

Advice on training

Read carefully the SDS before using the product.
Train personnel in the safe use of this product.

The information contained in this SDS is based on current knowledge and experience and describes the product only with regard to the safety of the product. The product must not be used for purposes other than those specified in section 1. The consumer is solely responsible for compliance with all applicable local laws and regulations. This information is not a guarantee of product quality. This information may be subject to revision as new knowledge and experience becomes available. Present SDS must be replaced with a new one if any changes will be made in the composition of the product.