

High performance, high efficiency lubricants for stationary gas engines.

WWW.Q80ILS.COM

Ŋ

High performance, high efficiency lubricants for stationary gas engines.

Optimize your gas engine

performance with Q80ils

COMPREHENSIVE GUIDE TO GAS ENGINE OILS

Q80ils' advanced range of gas engine oils designed to optimize the performance and longevity of your gas engines. In this guide, we will delve into the world of gas engines, exploring the unique challenges they face and the crucial role that proper lubrication plays in their performance and longevity.

As a leading provider of lubricant solutions, Q80ils understands the critical role that gas engine oils play in maximizing engine performance and minimizing downtime. We offer a comprehensive range of high-quality gas engine oils, specifically designed to meet the unique demands of various gas engine types and operating conditions. Our products are formulated to provide exceptional protection, performance, and fuel efficiency, allowing your gas engines to operate at their full potential.

In addition to our product range, Q80ils is committed to providing outstanding customer support and services. We believe in forming strong partnerships with our customers, collaborating closely with them to understand their specific requirements and challenges. Our team of experts is ready to assist you in selecting the right gas engine oil for your applications, ensuring that your engines receive the utmost care and attention they deserve.

We invite you to embark on this comprehensive journey into the world of gas engine oils with Q80ils. Together, we will explore the intricacies of gas engine lubrication, enabling you to make informed decisions to achieve superior performance and reliability for your gas engines as well as cost effective operations.



Enhancing gas engine performance



Choosing the right gas



Introducing Q80ils' gas



04 About



080ils' value-added

06 and reliability





36 080ils

services



Enhancing gas engine performance and reliability

Gas engine challenges 08 Importance of proper lubrication in gas 10





Gas engine challenges

Gas engines face several significant challenges due to their demanding operating conditions. Understanding these challenges is crucial for selecting the right gas engine oils to address them effectively. Let's have a look at some of the most important challenges faced by gas engines.

High temperatures

Gas engines operate at elevated temperatures, which can lead to oil degradation and oxidation. Oxidation causes the oil to thicken, form sludge, and generate harmful acids, reducing lubrication efficiency and accelerating wear.

Wear and friction

The high pressures and loads experienced by gas engines can lead to significant wear and friction between moving parts. This can result in premature component failure, reduced efficiency, and increased maintenance costs.

Deposit control

Deposits in the combustion chamber are a result of the combustion process and are heavily influenced by the gas composition as well as the additives of the engine lubricant. Too much combustion chamber deposits will create hot spots leading to pre-ignition and eventually engine damage.

Fuel quality variations

Gas engines can encounter variations in fuel quality, such as different gas compositions and levels of impurities. Lower-quality fuels may contain higher levels of sulfur and other contaminants that can negatively impact engine performance and accelerate wear.

66

The challenges of the modern gas engine, require an innovative thinking and fine balancing in terms of base oil qualities and a comprehensive additive package, providing customers with a trouble-free operation and extended oil life."

ALEX MALTCHEV PRODUCT LINE MANAGER ENERGY



Importance of proper

lubrication in gas engines

Proper lubrication is of utmost importance in gas engines due to the significant benefits it provides in terms of performance, longevity, and overall reliability. Let's explore the key reasons why proper lubrication is crucial for gas engines:

Friction reduction

Gas engines operate under high pressures and loads, resulting in metal-to-metal contact between moving components. This friction can cause significant wear, leading to premature component failure and reduced efficiency. Proper lubrication forms a thin protective film between these metal surfaces, minimizing friction and wear. By reducing friction, gas engine oils help to maximize energy transfer and optimize overall performance.

Heat dissipation

Gas engines generate significant heat during operation. Without proper heat transfer, this heat can build up, leading to increased temperatures that can cause thermal stress, deformations, and accelerated wear. High-quality gas engine oils are formulated to efficiently dissipate heat, transferring it away from critical components and maintaining stable operating temperatures. This helps to prevent overheating, maintain engine performance, and minimize the risk of thermal-related damage.

Wear prevention

Effective lubrication plays a vital role in preventing wear and extending the lifespan of engine components. By creating a lubricating film, gas engine oils ensure that moving parts glide smoothly, minimizing metal-to-metal contact. This helps to prevent excessive wear and extends the life of critical engine components, such as pistons, bearings, and camshafts.

Contaminant control

Gas engines are exposed to various contaminants, including combustion by-products, dust, and fuel impurities. These contaminants can mix with the oil and form harmful deposits that can obstruct oil passages, impede heat transfer, and increase wear. Proper lubrication with gas engine oils that contain advanced detergency and dispersant additives helps to control and minimalize the effect of these contaminants, ensuring engine cleanliness and maximizing performance.

Extended service life and reduced maintenance costs

High-quality gas engine oils, when used in accordance with manufacturer recommendations, can extend the service life of gas engines and increase maintenance intervals. Their superior lubrication properties, wear protection, and deposit control capabilities minimize the need for frequent maintenance and component replacements. This reduces downtime and maintenance cost, optimizes availability and reliability of gas engines, resulting in a better total cost of ownership (TCO) for the gas engine operator.

Corrosion protection

Gas engines can be exposed to corrosive environments due to the presence of acidic by-products in the combustion process. Without proper additives, these corrosive elements can attack and degrade engine components, leading to premature failure. Gas engine oils with corrosion inhibitors form a protective barrier on metal surfaces, shielding them from corrosive elements and preventing damage.

In summary, proper lubrication is vital for gas engines as it reduces friction, prevents wear, dissipates heat, controls contaminants, protects against corrosion, and ultimately improves engine performance and longevity. Choosing high-quality gas engine oils and adhering to recommended lubrication practices ensures optimal efficiency, extends engine life, and reduces maintenance costs, providing operators with peace of mind and a reliable power source for their applications.



Fuel efficiency enhancement

Gas engine oils play a role in improving fuel efficiency. By reducing friction and optimizing engine cleanliness, these oils help minimize energy losses and improve combustion efficiency. This leads to better utilization of fuel, reduced emissions, and enhanced overall fuel efficiency, resulting in cost savings and environmental benefits.

STATIONARY GAS ENGINE OILS Choosing the right gas engine oil

Factors to consider when selecting gas engine oils 14



Factors to consider when

selecting gas engine oils

When selecting the right gas engine oil, you need to consider several factors to ensure optimal performance, protection, and compatibility with your gas engine and its operating conditions. Let's explore the key factors to consider:

Engine type and specifications

Gas engines come in various types, such as sparkignited (SI) engines, dual-fuel engines, and lean-burn engines. Each engine type has different requirements regarding lubrication properties, viscosity grades, and additive packages. It is crucial to consult the engine manufacturer's guidelines and specifications to identify the appropriate lubricant that meets your engine's specific requirements.

Operating conditions

The operating conditions of your gas engine play a significant role in oil selection. Factors to consider include ambient temperature range, load fluctuations, engine speed, and fuel composition. Engines operating in extreme temperature environments require oils with enhanced viscosity control and excellent cold-start performance. Heavy-duty engines or those operating under high load conditions benefit from oils with superior formulations.

Maintenance and drain interval requirements

The desired maintenance strategy and drain interval requirements influence the choice of gas engine oil. Some engines have specific oil change intervals recommended by the manufacturer, while the majority follow a condition-based monitoring approach. Understanding the maintenance requirements and selecting oils with the appropriate additive packages and extended drain interval capabilities helps you to optimize maintenance schedules and minimize downtime.

OEM recommendations and approvals

Engine manufacturers often provide recommendations and approvals for specific gas engine oils. Following these recommendations ensures compatibility and compliance with warranty requirements. Checking for OEM approvals and following their guidelines is essential to ensure you select the right oil for your gas engine.

By considering these factors and seeking guidance from experts, you can select the most suitable gas engine oil that ensures optimal engine performance, protection, and longevity. Proper oil selection contributes to improved efficiency, reduced maintenance costs, extended service life, and enhanced environmental sustainability for gas engines.

Environmental considerations

Environmental factors, such as emission regulations and sustainability goals, are becoming increasingly important. Low-emission gas engines require oils that meet specific environmental standards (e.g. aftertreatment systems which might require some specific lubricants).

Supplier expertise and support

Consider partnering with a reputable and knowledgeable lubricant supplier who can provide technical support, guidance, and expertise. They can assist in understanding specific gas engine requirements, offer customized solutions, and provide ongoing support throughout the oil selection process and during operation.



STATIONARY GAS ENGINE OIL

Introducing Q80ils' gas engine oils

Q80ils: a trusted name in lubri Features and benefits Product range

S

icant technology	18
	20
	22



Q80ils: a trusted name in

lubricant technology

		Station	ary										
	Product	Jenbo	acher S (Oil 40	Q8 I	Mahler	GR5	Q8	Mahler (GR8	Q8	Mahler	G5
	Sulphated ash		0.8			0.5		0.8			0.5		
	TBN		8			6			8		6		
	Segment		Flagship)		Flagship			Flagship		I	Premium	1
	Gas type	LANDFILL	BIO		LANDFILL	BIO		LANDFILL	BIO		LANDFILL	BIO	NATURAL
OEM													
MAN	M3271-2 / -4				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	 Image: A mathematical states and the state of the state o	\checkmark	\checkmark	\checkmark
MWM					\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	 Image: A second s
Caterpillar Energy Solutions GmbH					✓	✓	✓	✓	✓	✓	✓	✓	✓
мwм					\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	Serie 2	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	Serie 3	 Image: A start of the start of	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	Serie 4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
INNIO Jenbacher	Serie 6	 Image: A start of the start of	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	 Image: A second s
	Serie 6 version H & K			\checkmark						\checkmark			
	Serie 9			\checkmark						\checkmark			
	Catalysts	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	VSG series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	VGF series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
GE Waukesha	VHP series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	AT 25/27 GL series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	APG series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Guascor	FGLD & SFGLD				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			
Rolls-Royce Power System	K series				✓	✓	 Image: A start of the start of						
Bergen Engines	B series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			
MTU Oncito Energia	400 Series (MDE)				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			 Image: A second s
wito Unsite Energie	4000 Series				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark
TEDOM					\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	 Image: A second s	\checkmark	\checkmark	\checkmark
Perkins							\checkmark	\checkmark	\checkmark	\checkmark			\checkmark

Q80ils is a renowned leader in lubricant technology, with a proven track record of delivering high-performance solutions across a wide range of industries. We offer a complete range of premium gas engine oils ranging from mineral to full synthetic lubricants. Backed by extensive research and development, Q80ils' gas engine oils are engineered to exceed industry standards and address the unique challenges faced by gas engines.

By choosing Q80ils' gas engine oils, your engines receive the highest level of care and maintenance, maximizing operational efficiency and prolonging engine life.

Q8	Mahler	G8	Q8	Mahler (G10	Q	8 Mahle	r R	Q8	Mahler	ма	Q8	Mahler	HA
	0.8			1			0.55			0.5			0.9	
	8			10			7			5.5			7.9	
	Premium			Premium			Premium	1	Т	raditiona	ıl	Т	raditiona	I
LANDFILL	BIO		LANDFILL	BIO		LANDFILL	BIO	NATURAL	LANDFILL	BIO	NATURAL	LANDFILL	BIO	NATURAL
\checkmark	\checkmark	✓	\checkmark	\checkmark							 Image: A second s	\checkmark	✓	
 ✓ 	\checkmark	\checkmark	\checkmark	\checkmark					\checkmark	\checkmark	<	\checkmark	\checkmark	
✓	✓	✓	 ✓ 	✓					✓	✓	✓	✓	✓	
✓	\checkmark	\checkmark	\checkmark	\checkmark					\checkmark	\checkmark	\checkmark			
\checkmark	\checkmark	\checkmark	\checkmark	\checkmark							\checkmark	\checkmark	\checkmark	
\checkmark	\checkmark	\checkmark	\checkmark	\checkmark							\checkmark	\checkmark	\checkmark	
✓	\checkmark	\checkmark												
\checkmark	\checkmark	\checkmark												
✓	~	~												
✓	\checkmark	\checkmark	\checkmark								\checkmark	<	<	\checkmark
\checkmark	\checkmark	\checkmark	\checkmark						\checkmark	\checkmark	\checkmark			\checkmark
\checkmark	\checkmark	\checkmark	\checkmark						\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark	\checkmark								\checkmark	\checkmark	\checkmark	\checkmark
 ✓ 	\checkmark	\checkmark									\checkmark			
✓	✓	✓	-	-	~							\checkmark	✓	~
						✓	✓	\checkmark			~			
 Image: A second s	\checkmark	 Image: A second s	\checkmark								\checkmark	\checkmark	\checkmark	
\checkmark	\checkmark	 Image: A second s												
✓	✓	✓									\checkmark	\checkmark	-	\checkmark
\checkmark	\checkmark	\checkmark									\checkmark	\checkmark	\checkmark	

		Station	ary										
	Product	Jenb	acher S	Oil 40	Q8	Mahler	GR5	Q8	Mahler	GR8	Q8	Mahler	G5
	Sulphated ash		0.8			0.5			0.8			0.5	
	TBN		8			6			8			6	
	Segment		Flagship)		Flagship)		Flagship)		Premium	ı
	Gas type	LANDFILL	BIO		LANDFILL	BIO		LANDFILL	BIO		LANDFILL	BIO	NATURAL
ОЕМ													
Cummins							\checkmark	\checkmark	\checkmark	\checkmark			\checkmark
Liebherr							\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	175SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	220SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	25SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	28SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	31SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
Mästeilä®	34SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
wartsna	50SG						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	20DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	31DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	32DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	34DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	46DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
	50DF						\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark

SERVICE COMPANY

Senergie

FEATURES AND BENEFITS OF Q80ILS' GAS ENGINE OILS

Q8Oils' gas engine oils offer a range of exceptional features and benefits, ensuring the optimal performance and reliability of your gas engines.



Due to the use of high quality base oils, our gas engine oils have excellent resistance to oxidation and thermal breakdown, ensuring long-lasting protection even under high-temperature operating conditions.

Enhanced engine cleanliness and deposit control:

Q8Oils' proprietary additive technology guarantees effective control over the buildup of combustion chamber deposits and carbon, while also preventing the formation of varnish and sludge.

Superior wear protection and engine life extension:

🖌 🖌

Q80ils' gas engine oils form a robust lubricating film that minimizes friction and wear, extending engine life and reducing maintenance requirements.





Increased fuel efficiency and reduced emissions:

By reducing internal engine friction and optimizing combustion, Q80ils' gas engine oils contribute to improved fuel efficiency and reduced emissions, promoting environmental sustainability.

Tailored formulations for specific gas engine applications:

Q80ils offers a comprehensive range of gas engine oils with specific formulations tailored to meet the requirements of various gas engine types, sizes, and operating conditions.



Compatibility with common gas engine designs:

Q80ils' gas engine oils are designed to be compatible with a wide range of gas engine designs, ensuring hassle-free integration and seamless operation.

Jenbacher S Oil 40

The high performance Jenbacher gas engine oil for non-natural gas

THE N°1 DRIVING FORCE **FOR YOUR ENGINE**

Jenbacher S Oil 40 is a high-performing synthetic (hydrocracked) lubricant for stationary gas engines. This medium-ash product is specifically developed for engines running under severe conditions in non-natural gas applications (biogas, sewage, landfill, woodgas, etc.).

Jenbacher S Oil 40 provides an increased drain interval (by on average 80% longer). The special used oil limits for this product provide a reliable operation with an extended oil drain, reducing life cycle costs significantly.

APPLICATIONS

Jenbacher S Oil 40 can be used for all series of Jenbacher engines Type 2, Type 3, Type 4 and Type 6, operating on various types of non-natural gases.

APPROVALS

Jenbacher S Oil 40 is approved for the whole range of Jenbacher nonnatural gas engines Type 2, Type 3, Type 4 and Type 6. Jenbacher S Oil 40 is approved for extended used oil limits following the Technical Instruction TA 1000-0099B (Limit levels for used oil in INNIO Jenbacher gas engines). For the latest approvals, check INNIO Jenbacher's technical instructions TA 1000-1109, which can also be found on www. innio.com.



OIL LIFE IN INNIO JENBACHER J320 ENGINE RUNNING ON NON-NATURAL GAS*

Based on > 9.000 condition monitoring samples.



EXTENDED CONDEMNING LIMITS

Extended condemning limits were defined specially for the Jenbacher S Oil 40. The extended condem limits are based on qualities of additive technology and the results from extensive validation trials.

Parameter	Standard limit value	Jenbacher S Oil 40 limit
Oxidation (ABS/cm)	20	25
TBN (mg KOH/g)	-50 %	3.0

*The displayed results are based on the experience of a limited number of engines during field tests. Actual results can vary depending on the type of engine, its maintenance, operating conditions and quality of prior lubricant used. Please consult the technical instructions from INNIO Jenbacher for specific guidelines.

PROPERTIES	METHOD		TYPICAL
Density, 20° C	D 4052	g/ml	0.862
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	90.0
Kinematic viscosity, 100°	C D 445	mm²/s	13.4
Viscosity index	D 2270	-	150
Total base number	D 2896	mg KOH/g	8.0
Pour point	D 97	°C	-18
Flash point, COC	D 92	°C	258
Sulfated ash	D 874	% mass	0.79
Copper strip, 3h, 100°	C D 130	-	1



I can honestly say that the oil has always delivered on minimising engine wear whilst maximizing oil life."

> "Having used Q8Oils' products in a fleet of landfill generating units for a number of years now, I can honestly say that the oil has always delivered on minimising engine wear whilst maximizing oil life. Ordering and delivery are always easy to arrange and prompt to site. Customer service is on hand whenever called upon to discuss available products and recommendations for application Highly recommended.

TONY OWEN, YLEM ENERGY, UK

 \odot 2024 INNIO - INNIO and Jenbacher are trademark applications or registered trademarks of INNIO or one of its affiliates

 Excellent protection and anti-wear properties

Exceptional condemning limits

Q8 Mahler **GR5 SAE 40**

High performance stationary gas engine oil

DESCRIPTION

Q8 Mahler GR5 is a ultra-high performance synthetic (hydrocracked) gas engine oil. This product is designed as part of the Q8Oils clean technology program, which benefits from in-house developments and customized solutions.Q8 Mahler G series products meet the challenges of the latest generation (steel piston, high output and low emission) engines, ensuring clean engines in combination with extended drain performance.

APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Natural gas, also suitably for special gases requiring a low ash gas engine oil.

SPECIFICATIONS & APPROVALS

Caterpillar Energy Solutions	CG132, CG170, CG260	MAN	M 3271-2 (Natural gas)
	TA 1000-1109, Type 2, 3 Series - Fuel class A, B, C	MWM	0199-99-02105
	TA 1000-1109, Type 4 (A & B) - Fuel class A, B, C	Tedom	61-0-0281
INNIO Jenbacher	TA 1000-1109, Type 4 (C) - Fuel class A, B, C TA 1000-1109, Type 6 (C & E) - Fuel class A, B, C TA 1000-1109, Type 6 (F) - Fuel class A TA 1000-1109, catalytic converter approved TA 1000-1109, extended oil change interval	Rolls-Royce Bergen	B series

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.861
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	88.7
Kinematic viscosity, 100°	C D 445	mm²/s	13.2
Viscosity index	D 2270	-	151
Total base number	D 2896	mg KOH/g	6.0
Pour point	D 97	°C	-18
Flash point, COC	D 92	°C	258
Sulfated ash	D 874	% mass	0.5
Copper strip, 3h, 100°	C D 130	-	1

Extended drain

Exceptional alkalinity reserve maintains engine performance and durability while extending oil drain interval.



Engine cleanliness

Superiorly balanced gas engine oil, providing exceptional engine cleanliness, low oil consumption with extreme protection for the cylinder head valves and valve seats, significantly reducing the total operational costs.

Q8 Mahler GR8 SAE 40

High performance stationary gas engine oil

DESCRIPTION

Q8 Mahler G8 is a high performance gas engine oil, based on Engine: Lean-burn and stoichiometric four-stroke premium Group II (hydrotreated) base fluid. This product is stationary gas engines, including high BMEP type. designed as part of the Q80ils clean technology program, which Operations: Mild to severe conditions, including high benefits from in-house developments and customized solutions. pressure, high load and high temperature operations. Gas type: Wide variety of gases, including natural Q8 Mahler GR series products meet the challenges of the latest gas, biogas, landfill gas, sewage gas, mine gas and generation (steel piston, high output and low emission) engines, wood gas. Exceptional performance in applications ensuring clean engines in combination with extended drain using gas with high H2S content. performance. The product is specifically developed with the aim to operate under the most challenging and extreme operating conditions while reducing the total operational cost of the user.

SPECIFICATIONS & APPROVALS

Caterpillar Energy Solutions	CG132, CG170, CG260
NNIO Jenbacher	TA 1000-1109, Type 2, 3 Series - Fuel class A, B, C TA 1000-1109, Type 6 (C & E) - Fuel class A, B, C TA 1000-1109, Type 6 (F) - Fuel class A TA 1000-1109, catalytic converter approved TA 1000-1109, extended oil change interval Type 9 - Fuel class A
	spe o Tuereiuson

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.858
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	88.2
Kinematic viscosity, 100°	C D 445	mm²/s	13.1
Viscosity index	D 2270	-	148
Total base number	D 2896	mg KOH/g	8.0
Pour point	D 97	°C	-18
Flash point, COC	D 92	°C	254
Sulfated ash	D 874	% mass	0.8
Copper strip, 3h, 100°	C D 130	-	1

Enhanced technology

Maximal oil life due to to exceptional oxidative and thermal stability even at high temperatures.



APPLICATIONS

MAN	M 3271-4 (Special gas)
MWM	0199-99-02105
Tedom	61-0-0281

Primato relies

gas engine oil

on Q8 Mahler GR8

We rely on the quality of gas engine oils and the experts of Q80ils.

heating and power plant (CHP), powered by INNIO Jenbacher 624 engines.



High stability, low cost

The staff of Q80ils provides an excellent service and is very committed to monitoring the oil quality.

KEVIN PITTOORS, DIRECTOR OF PRIMATO

Guaranteed reliability



Q8 Mahler G5 SAE 40

High performance stationary gas engine oil

DESCRIPTION

Q8 Mahler G5 is a high performance gas engine oil, based on premium Group II (hydrotreated) base fluid. This product is designed as part of the Q8Oils clean technology program, which benefits from in-house developments and customized solutions. Q8 Mahler G series products meet the challenges of the latest generation (steel piston, high output and low emission) engines, ensuring clean engines in combination with extended drain performance.

APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Natural gas, also suitably for special gases requiring a low ash gas engine oil.

SPECIFICATIONS & APPROVALS

Caterpillar Energy Solutions	CG132, CG170, CG260
INNIO Jenbacher	TA 1000-1109, Type 2, 3 Series - Fuel class A, B, C TA 1000-1109, Type 4 (A & B) - Fuel class A, B, C TA 1000-1109, Type 4 (C) - Fuel class A, B, C
	TA 1000-1109, Type 6 (C & E) - Fuel class A, B, C
	TA 1000-1109, Type 6 (F) - Fuel class A TA 1000-1109, catalytic converter approved

MWM	0199-99-02105
Wärtsilä	175SG, 20DF, 25SG, 28SG, 31DF, 31SG, 32DF, 34DF, 34SG, 46DF, 50DF, 50SG
Deutz	0199-99-01213
Liebherr	

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.889
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	117
Kinematic viscosity, 100°	C D 445	mm²/s	13.1
Viscosity index	D 2270	-	106
Total base number	D 2896	mg KOH/g	6.0
Pour point	D 97	°C	-12
Flash point, COC	D 92	°C	250
Sulfated ash	D 874	% mass	0.5
Copper strip, 3h, 100°	C D 130	-	1

Q8 Mahler G8 SAE 40

High performance stationary gas engine oil

DESCRIPTION

Q8 Mahler G8 is a high performance gas engine oil, based on premium Group II (hydrotreated) base fluid. This product is designed as part of the Q8Oils clean technology program, which benefits from in-house developments and customized solutions. Q8 Mahler G series products meet the challenges of the latest generation (steel piston, high output and low emission) engines, ensuring clean engines in combination with extended drain performance.

SPECIFICATIONS & APPROVALS

Caterpillar Energy Solutions	CG132, CG170, CG260
INNIO Jenbacher	TA 1000-1109, Type 2, 3 Series - Fuel class A, B, C TA 1000-1109, Type 6 (C & E) - Fuel class A, B TA 1000-1109, Type 6 (F) - Fuel class A TA 1000-1109, catalytic converter approved TA 1000-1109, extended oil change interval

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.892
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	118
Kinematic viscosity, 100°	C D 445	mm²/s	13.2
Viscosity index	D 2270	-	114
Total base number	D 2896	mg KOH/g	8.0
Pour point	D 97	°C	-15
Flash point, COC	D 92	°C	250
Sulfated ash	D 874	% mass	0.8
Copper strip, 3h, 100°	C D 130	-	1

\checkmark

Own product development

In-house developed outstanding additive package in combination with a carefully chosen Group II base oil.

Engine performance

Outstanding resistance against preignition and knocking ensuring high engine efficiency.



Excellently balanced gas engine oil, providing outstanding engine cleanliness, low oil consumption with outstanding protection for the cylinder head valves and valve seats, significantly reducing the total operational costs.



APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Wide variety of gases, including natural gas, biogas, landfill gas, sewage gas, mine gas and wood gas. Exceptional performance in applications using gas with high H2S content.

Guascor Power	FGLD, SFGLD series
MAN	M 3271-4 (Special gas)
Liebherr	
MWM	0199-99-02105

29



Decades of experience



We share our knowledge with our partners

Q8 Mahler **G1 SAE 40**

DESCRIPTION

00

Team of specialists

Passionate experts

Q8 Mahler G1 is recommended for two-stroke gas engines where low ash or ashless oils are recommended. Q8 Mahler G1 can also be used to lubricate reciprocating compressors in which natural gas is compressed and pressures do not exceed 10.000 kPa. Using Q8 Mahler G1 in both the gas engine and the gas compressor will simplify the lubricant inventory.

Q8 Mahler G10 SAE 40

DESCRIPTION

Q8 Mahler G10 is a high performance gas engine oil, based on premium Group II (hydrotreated) base fluid. This product is designed as part of the Q80ils clean technology program, which benefits from in-house developments and customized solutions. Q8 Mahler G10 is designed to answer the challenges of the modern gas engines in combination with acid-gases and high levels of H2S.

Q8 Mahler **R SAE 40**

DESCRIPTION

Q8 Mahler R is a high performance synthetic (hydrocracked) gas engine oil. This product is designed as part of the Q80ils clean technology program, which benefits from in-house developments and customized solutions. Q8 Mahler R meet the challenges of the latest generation (steel piston, high output and low emission) engines, ensuring clean engines in combination with extended drain performance.



Scan the QR-code to discover our full range of products and the benefits.



APPLICATIONS

Two-stroke gas engines where low ash or ashless oils are recommended.



APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Wide variety of gases, including natural gas, biogas, landfill gas, sewage gas, mine gas and wood gas. Exceptional performance in applications using gas with high H2S content.

APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Natural gas, also suitably for special gases requiring a low ash gas engine oil.

CASE STUDY

Q80ils and INNIO Revolutionize aspects of engine

operation at Bioenergie Aspach

significantly exceeded, and we are very satisfied with the engine and the Jenbacher S Oil 40."

JOHANN ANGLEITNER-KETTL

Powering the success of Bioenergie Aspach

Proven performance

Our expectations have been

Future-proof approach to maintain efficiency and cost-effectiveness

Q8 Mahler MA SAE 40

Advanced stationary gas engine oil

DESCRIPTION

Q8 Mahler MA is an advanced gas engine oil, based on premium Group II (hydrotreated) base fluid. This product is designed as part of the Q80ils gas engine oil technology program, which benefits from in-house developments and customized solutions.

APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Natural gas, also suitably for special gases requiring a low ash gas engine oil.

SPECIFICATIONS & APPROVALS			
Caterpillar Energy Solutions	CG132, CG170, CG260	MTU Onsite Energy	400 series
Deutz	0199-99-01213	MWM	0199-99-02105
INNIO Waukesha	12-1880	Perkins	4006, 4008 series
MAN	M 3271-2 (Natural gas)		

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.891
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	115.8
Kinematic viscosity, 100°	C D 445	mm²/s	13.05
Viscosity index	D 2270	-	107
Total base number	D 2896	mg KOH/g	5.5
Pour point	D 97	°C	-12
Flash point, COC	D 92	°C	254
Sulfated ash	D 874	% mass	0.5
Copper strip, 3h, 100°	C D 130	-	1

Q8 Mahler HA SAE 40

High performance stationary gas engine oil

DESCRIPTION

Q8 Mahler HA is an advanced gas engine oil, based on premium Group II (hydrotreated) base fluid. This product is designed as part of the Q80ils gas engine oil technology program, which benefits from in-house developments and customized solutions.

SPECIFICA	TIONS & APPROVALS
Caterpillar Energy Solutions	CG132, CG170, CG260
INNIO Jenbacher	TA 1000-1109, Type 2, 3 Series - Fuel class B, C
INNIO Waukesha	12-1880
MAN	M 3271-4 (Special gas)

PROPERTIES	METHOD	UNIT	TYPICAL
Density, 20° C	D 4052	g/ml	0.858
Viscosity grade	-	-	SAE 40
Kinematic viscosity, 40°	C D 445	mm²/s	87.1
Kinematic viscosity, 100°	C D 445	mm²/s	12.7
Viscosity index	D 2270	-	14.3
Total base number	D 2896	mg KOH/g	7.0
Pour point	D 97	°C	-12
Flash point, COC	D 92	°C	245
Sulfated ash	D 874	% mass	0.55
Copper strip, 3h, 100°	C D 130	-	1



Enhanced technology

High lubricity properties providing low wear of engine components, significantly reducing maintenance costs.

Extended drain

Advanced alkalinity reserve maintains engine performance and durability while extending oil drain interval. Own product development

In-house developed advanced additive package in combination with a carefully chosen Group II base oil.



APPLICATIONS

Engine: Lean-burn and stoichiometric four-stroke stationary gas engines, including high BMEP type. Operations: Mild to severe conditions, including high pressure, high load and high temperature operations. Gas type: Wide variety of gases, including natural gas, biogas, landfill gas, sewage gas, mine gas and wood gas. Exceptional performance in applications using gas with high H2S content.

MTU Onsite Energy	400 series
MWM	0199-99-02105
Tedom	61-0-0281



STATIONARY GAS ENGINE OILS

About Q80ils

About Q80ils Value proposition Research & development A clear choice for own develo Q80ils clean technology Strong OEM relationships

	38
	40
	42
pment	44
	46
	48



38

Ongoing program of developments & field trials of testing the next generation of Q8 Mahler products

2017



A BRIGHT FUTURE AHEAD!

Partnership with INNIO Jenbacher: Jenbacher S Oil 40 for non-natural gas engines

2021





REDUCE OPERATIONAL COSTS

With our assistance, you can effectively enhance the lubrication and maintenance of your gas engines, leading to increased productivity, minimized downtime, and a strengthened competitive edge.



TACKLE ANY CHALLENGES IN EXTREME OPERATING CONDITIONS

Gas engines often face harsh conditions. By combining our expertise with industrial specifications, we ensure that your engines consistently perform at their best.





CUSTOMIZED SOLUTIONS YOU CAN TRUST

We pride ourselves for relying on our unique formulations and tailor-made solutions. Our dedicated R&D departments are committed to finding the perfect answers for all applications and challenges within the sector.



proposition

As the "Preferred Supplier" of the energy sector, we use our knowledge and expertise to generate extra value for your company. We do this at both production and financial level. Because our solutions not only guarantee internally cleaner engines, they also extend the change interval of the gas engine oil and thus ensure a higher efficiency, which reduces operational costs. In short, our advanced solutions provide you with several benefits.



UNMATCHED TECHNICAL EXCELLENCE

Rest assured, our products are technically superior, supported by the approvals of all major OEMs in the industry.

Research & development

Our R&D department is an important part of our search for innovative products and strategies. Through our extensive and intensive research, we determine the future technical requirements of lubricants. This is how we continue to exceed the expectations of the industry and our customers.

In our modern blending plants in Belgium and Italy, as well as in our research and technology centers in the Netherlands & Italy, we create products that meet and exceed the highest performance requirements. And that at a competitive market price.



State-of-the-art production facilities in Belgium, Italy and various productions via local partners. This combined with our own research and technology centers.



Products that exceed the highest performance requirements. Approved by all major OEMs.



Custom product development based on customer challenges and needs.



Superior solution for all lubrication needs.

0) **KEY FACTS**

30

years of experience in R&D

in the petroleum sector

Certified ISO 9001, 18001, ISO 14001, RC14001



oil analyses per year



scientists and support staff

A clear choice for own development

A common issue among most oil companies is their limited awareness of the chemical components they use. Why? Because they purchase an 'additive package' from regular additive suppliers. Consequently, they face constraints in providing comprehensive advice, often struggling to address specific challenges or meet customer requirements.

However, Q80ils takes a distinct approach by heavily investing in research and product development. Our gas engine oils are the result of meticulous R&D efforts, focusing not only on selecting the precise base oils and components but also on ensuring their proper interaction.

As a result of this dedication, we can deliver customized solutions for every challenge. These solutions not only exhibit high quality but also surpass the specifications of other motor oils by a considerable margin.

We refrain from relying on 'black box'formulas; instead, we carefully choose each component ourselves. This approach grants us complete control over the quality, performance, and future advancements of our products, ensuring utmost satisfaction for our customers.

A solid base

Based on high-quality base oil, we produce an extensive range of lubrication solutions. The high quality of the base oils and additives determines the level of the end product, i.e. the quality of the solution offered.



MOST OIL COMPANIES...

- do not know the chemical components they are using
- buy a 'GEO additive pack' from additive suppliers
- \rightarrow restrictions when advising on performance or product modifications



Q80ILS...

- has own additive technology so added value in terms of performance
- has experience gained in field trials and testing carried out in our laboratories
- → we have full control over the performance of our products.

Theroleofbaseoilsisnot to be underestimated, selecting the right base oils supports performance in terms of viscosity, oxidation stability and will in the end offer a longer

lasting performance.

DISPERSANTS



additives selected by Q8

ANTI-OXIDANTS Controls oxidation



Q80ils

clean technology

Our primary objective is to create high quality products capable of enduring the elevated temperatures of modern gas engines while maintaining ample TBN reserves. However, our utmost priority lies in safeguarding your engine from varnish formation and carbon deposits through our gas engine oils.

Oxidation stability

The oxidation stability of a product primarily relies on the quality and type of base oil, coupled with the effectiveness of additive technology. Products exhibiting high oxidation stability enable lubricants to withstand elevated operating temperatures while effectively preventing the formation of sludge and varnish. Additionally, they maintain the viscosity at the appropriate level, ensuring optimal performance.

Low deposit tendency

Conventional products may lead to the formation of hard and abrasive deposits in new high-performance engines. In contrast, our advanced technology guarantees the formation of soft deposits, significantly reducing the need for maintenance and thereby preventing downtime. As a result, our solution leads to a reduced total cost of ownership.

With our innovative Q80ils clean technology, our products stand out for their exceptional userfriendliness and reliability. Your engine will stay cleaner for extended periods, reducing the frequency of required cleaning and oil changes. As a result, overall operational costs decrease significantly, providing added value and savings.

Total base number

TBN is an indication of the amount of base reserve additive available to neutralize strong acids, witch are a by-product of the combustion processes.

Good TBN retention prevents accumulation of strong acids in the oil which leads to corrosive wear.

Continuous development in R&D

Continuously striving for improvement and innovation, we ensure that our products deliver the best possible results. Our commitment is to provide customers with even greater benefits in their operational activities through our ongoing efforts.



- Outstanding TBN retention and oxidation stability
- Effective control on the combustion chamber deposits
- of ring sticking
- Prevention of varnish and sludge formation

• Enhanced cleanliness of piston ring grooves, significantly reducing the risk

Q8**@**Oils

Strong OEM Relationships

At Q80ils, we provide top-notch products, but our commitment doesn't end there. We continuously strive for improvement in all aspects of our operations, which is why we comply with international standards and quality systems.

OEM approvals are an integral part of our stringent quality standards at Q8Oils. Thanks to our strong relationships and official partnerships with various manufacturers in the industry, we can offer official OEM approvals while continuously pushing the boundaries of innovation. This approach enables us to develop the best-performing gas engine oils, providing effective solutions to the sector's challenges.

Our close collaboration with OEMs allows us to secure official approvals for these products. For instance, the Q8 Mahler range has received approval from all leading gas engine OEMs.

A STRATEGIC PARTNERSHIP

ABOUT INNIO

INNIO is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression at or near the point of use. With the Jenbacher and Waukesha product brands, INNIO pushes beyond the possible and looks boldly toward tomorrow.



JENBACHER

INNIO and Q80ils have joined forces in a long-term partnership agreement to globally supply lubricants for Jenbacher gas engines operating on non-natural gas, such as sewage gas, biogas, and landfill gas.

Through this collaboration, knowledge sharing is amplified, and it paves the way for accelerated and innovative product development in the years to come. Building upon our successful technological partnership that has thrived for over three decades, this agreement aims to enhance the longevity and efficiency of Jenbacher type 2, 3, 4, and 6 engines running on non-natural gas.





STATIONARY GAS ENGINE OILS

Q80ils' value-added services

Q80ils PALUB QRAS: Q8Oils routine analysi Boroscope service More tools for GEO owners

	52
s service	54
	55
	56



Q80ils PALUB

Product Applications Lubricants (PALUB) represents the technical service division of Q80ils. Our team comprises passionate experts with extensive knowledge in the sector. Don't hesitate to reach out to us for inquiries regarding product applications, specifications, safety requirements, and any other relevant information. We are here to assist you with enthusiasm and expertise.

Advise

Contact us for all your questions about our product range, new products, and market specifications.

Sales support

Our experts also support the sales team in visiting companies and distributors.

Training

We organize training courses on new products and/ or applications, as well as extended introduction sessions for newcomers to the oil market.

More information on https://www.Q80ils.com/palub/

Intermediary

PALUB can act as an intermediary between you and our R&D team.

Maintenance

We handle the maintenance of all tools provided through Q80ils.

Marketing support

PALUB can provide support in the preparation of product datasheets, the development of brochures, translations (FR, NL, DE) and the creation of labels for large packaging.



QRAS





Q80ils routine analysis service

Q80ils understands that operating conditions vary significantly, and we are here to offer expert advice on selecting the most suitable oil for your specific application. Take advantage of QRAS, designed to enhance your productivity and reliability to the fullest. Remember, knowledge comes from measurement!

Our Q8 Routine Analysis Service (QRAS) is a specialized offering for our valued customers and partners. Through this analysis, customers can extend the lifespan of their engines or machines, reduce operating costs, and optimize their lubrication program. Regular oil analyses help prevent potential severe damage or breakdowns by identifying issues and providing insights into the necessary actions to be taken and their urgency, as interpreted by our team of experts.





Engine inspection with the newest technology

Your business relies on the daily operation of gas engines, making regular maintenance and accurate inspections crucial to keep everything running smoothly. Boroscopes, optical instruments utilized for inspections in hard-toreach areas, come to the rescue. They enable users to look inside machined parts and detect internal defects that may remain hidden to the naked eye, all without the need for dismantling the machine.

BENEFITS

- Access your results online anytime for your convenience. •
- Get personalized recommendations from our technical expert support team regarding • your oil condition and engine wear.
- Receive an in-depth report encompassing all pertinent details, including historical data, oil sample analysis, machine condition, and more.

BENEFITS

- Avoid extensive dismantling of the engine; only the necessary parts related to any breakdown require attention.
- Reduce the time required to assess the engine's technical condition, minimizing downtime.
- Early identification of potential damage or malfunctions.
- Crystal-clear, high-quality images from the boroscope enable us to spot even the tiniest imperfections.

55

More tools for

GEO owners

How can you be sure that one oil type offers better results than the other? Discover the Q8Oils' range of outstanding gas engine oils via our easy-to-use applications and find out what value they can bring to your operations.



Cost-benefit calculator

A comprehensive tool that facilitates a detailed cost comparison among various gas engine lubricants.

In its calculation, this tool considers a wide range of parameters such as price, drain interval, down time, oil consumption, maintenance costs, etc.





Product equivalent guide

A quick and easy reference for identifying the appropriate Q80ils equivalent for most of the gas engine lubricants. The recommendation will include the required technical specifications.



Approvals and recommendations

An important tool that provides every gas engine operator with the most current and relevant information regarding available lubricant options, tailored to their specific engine type, model, and gas application.

The recommendations provided will encompass all OEM requirements.

More information: https://tools.Q80ils.com/en/home/



Q80ils customer service:

driving our customers' success

Our customer service team has over 15 dedicated professionals, ensuring full customer satisfaction. We have multi-lingual teams to serve our domestic customers, as well as a dedicated export team. The team is headquartered in Antwerp, Belgium, but collaborates closely with our local teams in Italy, UK, Spain, UK, USA, and Kuwait.

Contact us!

ervice:

57

Conclusion

By choosing Q8Oils' gas engine oils, you are making a smart investment in the long-term performance and reliability of your gas engines. Our comprehensive range of products, coupled with our industry-leading expertise and support services, will empower your business to achieve higher operational efficiency, reduced downtime, and improved profitability.

Contact our dedicated team of experts today to discover how Q8Oils can revolutionize your gas engine lubrication and take your operations to the next level. produ

Kuwait Petroleum (Belgium) N.V.

Petroleumkaai 7 2020 Antwerp - Belgium

T +32 (0)3 247 38 11 E Q80ilsmarketing@Q8.com

www.Q80ils.com





Consult our oil recommendation tool to find out which Q8Oils product is suitable for optimal performance of your vehicle.

https://tools.Q80ils.com/

Visit our website www.Q80ils.com





Q80ils Petroleumkaai 7 2020 Antwerp - Belgium

cslubes@Q80ils.com

WWW.Q80ILS.COM