



# SHELL KÄLTEMASCHINENÖLE Portfolio Änderungen 2010

Markenpartner  
Informationsveranstaltungen  
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# HINTERGRUND DER PORTFOLIO ÄNDERUNGEN 2010

- Shell Lubricants hat das Ziel ein global einheitliches Portfolio zur Verfügung zu stellen.
  - Viele der heutigen Produkte sind nur in einem oder sehr wenigen Ländern verfügbar.
  - Außerdem haben wir viele verschiedenen Produkte im globalen Portfolio, welche für die gleiche Anwendung genutzt werden können.
  - Das zukünftige Portfolio wird auch weiterhin die häufigsten Anwendungsfälle abdecken.
- Reach Anforderungen
  - Produktion und Vertrieb von Produkten die den REACH Anforderungen nicht entsprechen, muss bis Ende November 2010 eingestellt werden.

# AUSWIRKUNGEN AUF DAS SHELL KÄLTEMASCHINENÖL PORTFOLIO

- Der Name Shell Clavus wird durch **Shell Refrigeration Oil** ersetzt.
- Das Kältemaschinenöl-Portfolio wird vereinfacht. Zukünftig wird es nur noch 3 Hauptsorten geben, welche die häufigsten Anwendungen abdecken.
- Sorten, welche die REACH Anforderungen nicht erfüllen, werden bis spätestens 30. November aus dem Portfolio genommen:
  - Shell Clavus
  - Shell Clavus G
  - Shell Clavus SD 22-12
  - Shell Clavus SP
  - Shell Clavus SG

# FOLGENDE PRODUKTE VERBLEIBEN IM PORTFOLIO

- Für chlorfreie Kältemittel (FKW), z.B 134a



- **Shell Refrigeration Oil S4 FR-F**
- Entspricht der aktuellen **Shell Clavus R** Formulation

- Für alle wichtigen Kältemittel



- **Shell Refrigeration Oil S4 FR-V**
- Entspricht der aktuellen **Shell Clavus AB** Formulation
- Alternative für Clavus, Clavus G and Clavus SD22-12 für Systeme mit halogenierten oder Kohlenwasserstoff Kältemittel

# SHELL REFRIGERATION OIL S2 FR-A WIRD NEU EINGEFÜHRT

- Für Ammoniak und Propan Anlagen



- **Shell Refrigeration Oil S2 FR-A**
- Entspricht der aktuellen **Clavus S** Formulation
- Alternative für Shell Clavus in NH<sub>3</sub> oder Propan Anlagen

- Bitte Umstellungshinweise beim Wechsel von gelöschten Sorten auf die folgenden beachten:

- **Shell Refrigeration Oil S4 FR-F**
- **Shell Refrigeration Oil S4 FR-V**
- **Shell Refrigeration Oil S2 FR-A**

# KÄLTEMITTEL TRENDS

Kältemittel	Trend	Hintergrund	Zukünftige Sorte
CFC (R12)	Stark Abnehmend	Abbau der Ozonschicht – stark eingeschränkt entsprechend dem Montreal Protokoll	Shell Refrigeration Oil S4 FR-V
HCFC (R22)	Abnehmend	Abbau der Ozonschicht – EU Verbot für Neubefüllung seit 2010.	Shell Refrigeration Oil S4 FR-V
HFC (R134a)	Abnehmend	Potentielles Treibhausgas - weitverbreitet, aber der Einsatz nimmt seit dem Kyoto Protokoll ab.	Shell Refrigeration Oil S4 FR-F
NH3 (R717)	Weit verbreitet & steigend	Design Probleme aufgrund von Toxizität aber weitverbreitet und steigend	Shell Refrigeration Oil S2 FR-A / Shell Refrigeration Oil S4 FR-V
R290 (propane)	Steigend	Neue Design Probleme bezüglich Entflammbarkeit / Hochdruck , aber steigend	Shell Refrigeration Oil S2 FR-A / Shell Refrigeration Oil S4 FR-V
CO2 (R744)	Steigend	Benötigt hohen Arbeitsdruck – teurerer Komponenten	Shell Refrigeration Oil S4 FR-F

Ammoniak Verdichter sind momentan die meist verbreiteten Kältemaschinen.

Shell Refrigeration Oil S2 FR-A bietet in diesen Anwendungen technische Vorteile wie:

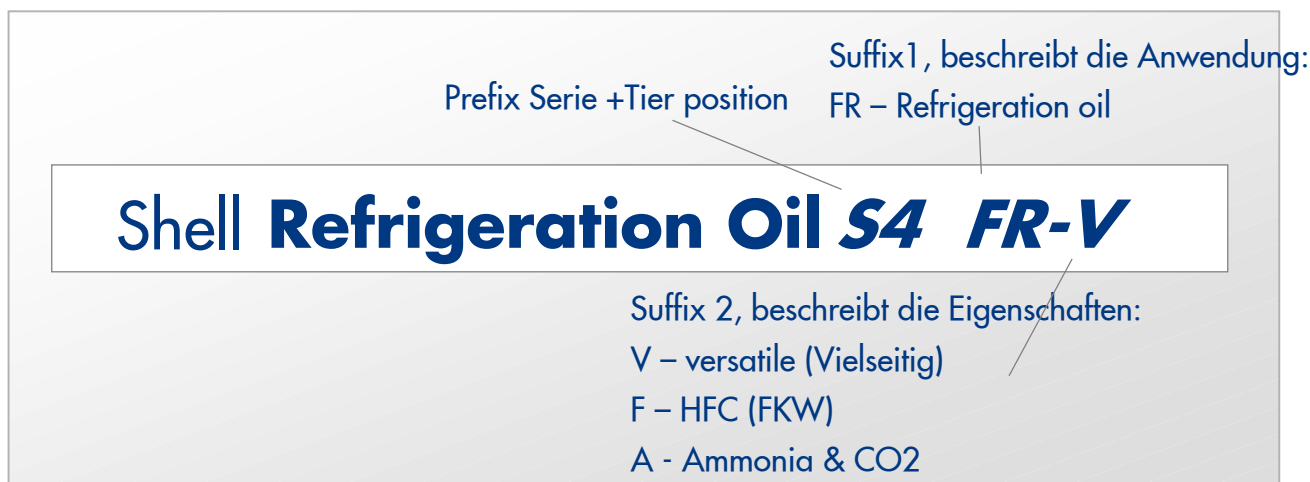
\* Geringe Schaumneigung \* Geringerer Ölverbrauch \* Geringer Neigung zur Ablagerungsbildung

# DAS PORTFOLIO IM ÜBERBLICK

Aktuelles Portfolio	Kältemittel	Zukünftiges Portfolio	Neuer Name	Alternativ Produkt , wenn entsprechende Kältemittel zur Anwendung kommt – nur für neue Anwendungen – kein Top Up	
				Mid tier: S2	Top tier: S4
Clavus G	R12 (CFC)	Nein			Shell Refrigeration Oil S4 FR-V
Clavus	R717 (NH3); R22 (HCFC); R12 (CFC)	Nein		Shell Refrigeration Oil S2 FR-A nur für R717 (NH3)	
Clavus SD22-12	R22 (HCFC)	Nein			
<b>Clavus S</b>	<b>R717 (NH3); R290 (propane)</b>	<b>Ja</b>	<b>Shell Refrigeration Oil S2 FR-A</b>	Shell Refrigeration Oil S2 FR-A	
Clavus SP	R744 (CO2); R717 (NH3)	Nein			
<b>Clavus AB</b>	<b>R22 (HCFC); R12 (CFC); R717 (NH3); R290 (propane)</b>	<b>Ja</b>	<b>Shell Refrigeration Oil S4 FR-V</b>	Shell Refrigeration Oil S2 FR-A nur für R290 (propane) & R717 (NH3)	
Clavus SG	R717 (NH3) (teilweise mischbar )	Nein			
<b>Clavus R</b>	<b>R134a (HFC); R744 (CO2)</b>	<b>Ja</b>	<b>Shell Refrigeration Oil S4 FR-F</b>		

## NEUES PORTFOLIO – NEUES SUFFIX SYSTEM

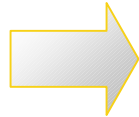
- Die Produkte des neuen Portfolios werden nach einem neuen Shell System bezeichnet.
- So erhalten unsere Kunden mehr Informationen über den Öltyp und die Spezifikation:





# ZEITPLAN

■ Seit Mai  
2010



- **Kommunikation an die Kunden**

■ Ab Oktober  
2010



- **Abverkauf des Vorrats der alten Formulationen**
- **Überleitung der Bestellungen zu den neuen Produkten**
- **Neue Produktbroschüren verfügbar**

■ Ab Oktober  
November  
2010



- **Auslieferung der neuen Formulation/Sorten**

# SHELL REFRIGERATION OIL BROSCHÜRE



**SHELL REFRIGERATION OILS**

**REFRIGERATION OILS DESIGNED FOR RELIABILITY AND PROTECTION**

DESIGNED TO MEET CHALLENGES

**EVERY PART OF YOUR MACHINE OR PROCESS HAS BEEN METICULOUSLY ENGINEERED, SO YOU WANT TO BE SURE THAT YOU CHOOSE A LUBRICANT THAT HAS BEEN DESIGNED TO ENSURE THAT YOUR EQUIPMENT IS WELL PROTECTED AND WORKS EFFICIENTLY.**

The Shell refrigeration oil range has been developed to enable equipment manufacturers and end-users to select the oil for their system that will deliver optimum value through enhanced protection, long oil life and high system efficiency.

**WEAR PROTECTION**  
Shell refrigeration oils are designed to minimise the wear in refrigeration compressors, for example, in the bearings and pistons – the most critical parts of a reciprocating compressor.

**OIL LIFE**  
The longer the oil life, the less fluid maintenance is required to help your equipment to operate for longer without interruption. Shell refrigeration oils are designed to have excellent high temperature and oxidation stability, and to provide long service life even where, for example, compressor discharge temperatures are high.

**SYSTEM EFFICIENCY**  
All Shell refrigeration oils are designed to help the refrigerator compressor maintain optimum efficiency through cleanliness and the control of deposit and sludge formation. The range includes Shell Refrigeration Oil S2 FRA, which has been specially optimised for use in ammonia systems. It has been designed to reduce light-end oil carryover, which minimises oil thickening in the compressor and reduces oil coating of the internal evaporator surfaces.

**REFRIGERANT COMPATIBILITY**

	R22 Hydrochlorofluorocarbon (HCFC)	R134a Hydrofluorocarbon (HFC)	R717 Ammonia (NH <sub>3</sub> )	R290 Propane
Tier 4	Shell Refrigeration Oil S4 REV	Shell Refrigeration Oil S4 REF	Shell Refrigeration Oil S4 REV	Shell Refrigeration Oil S4 REV
Tier 3				
Tier 2			Shell Refrigeration Oil S2 FRA	Shell Refrigeration Oil S2 FRA

**SHELL REFRIGERATION OILS AT A GLANCE**

**Shell Refrigeration Oil S2 FRA**

- Reliable performance
- Compatible with other hydrocarbons and NH<sub>3</sub>
- Technology: Mineral oil

ISO viscosity grades: 46, 68  
Specifications and approvals: DIN 51503 IAA and KE for use with R717, R290 and other hydrocarbons

**Shell Refrigeration Oil S4 REV**

**SYNTHETIC**

- Extra performance
- Compatible with most standard refrigerants
- Technology: Synthetic oil, based on alkylated benzenes

ISO viscosity grades: 32, 46, 68, 100  
Specifications and approvals: DIN 51503 IAA, IC and KE for use with R22, R717, R290 and other hydrocarbons

**Shell Refrigeration Oil S4 REF**

**SYNTHETIC**

- Extra performance
- For use with HFC refrigerants
- Technology: Synthetic oil, based on polyol ester technology

ISO viscosity grades: 32, 46, 68, 100  
Specifications and approvals: DIN 51503 KE for use with R134a and most other fluorinated hydrocarbons

All details of approvals for all products can be obtained from your Shell representative, approvals and data will vary by viscosity grade. \*Shell Lubricants' sales to the various Shell companies engaged in the lubricants business.

**FULL PRODUCT AND SERVICE PORTFOLIO**

Shell Lubricants is the market leader in lubricants, and has a 60-year history of innovation. We are constantly investing to develop better lubrication solutions, as demonstrated by:

- Shell Tellus S4 ME hydraulic oil – for up to a 1.3-9% increase in energy efficiency
- Shell Cosma S4 R air compressor oil – for up to 12,000 hours of protection.

In addition, Shell provides the worldwide Shell LuboAnalyst oil condition monitoring service, which is designed to help you improve your business performance. Whatever your needs or application, we can provide a full range of oils and greases, including synthetic, high-performance products and additional services.

For more information, please contact

[shell.com/lubricants](http://shell.com/lubricants)

# VERFÜGBARE SKUs

Shell Produkt	Pack	Mid Tier Alternative	Top Tier Alternative
<b>Clavus 100</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 100 / Drum
<b>Clavus 15</b>	Drum 209 L T/H RYtop (1)	Nein	Nein
<b>Clavus 46</b>	Drum 209 L T/H RYtop (1)	Refrigeration Oil S2 FR-A 46 /	Refrigeration Oil S4 FR-V 46 / Drum
<b>Clavus 68</b>	Drum 209 L T/H RYtop (1)	Refrigeration Oil S2 FR-A 68 /	Refrigeration Oil S4 FR-V 68 / Drum
	Pail 20 L Tinplate German Cuboid W (1)	Refrigeration Oil S2 FR-A 68 /	Refrigeration Oil S4 FR-V 68 / Pail
<b>Clavus G 32</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 32 / Drum
	Pail 20 L Tinplate German Cuboid W (1)	Nein	Refrigeration Oil S4 FR-V 32 / Pail
<b>Clavus G 46</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 46 / Drum
	Pail 20 L Tinplate German Cuboid W (1)	Nein	keine Pails mehr verfügab
<b>Clavus G 68</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 68 / Drum
	No Packaging (BULK)	Nein	Refrigeration Oil S4 FR-V 68 / Bulk
	Pail 20 L Tinplate German Cuboid W (1)	Nein	Refrigeration Oil S4 FR-V 68 / Pail
<b>Clavus R 100</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-F 100 / Drum
	Pail 20 L T/H Steel Shell Yellow (1)	Nein	keine Pails mehr verfügab
<b>Clavus R 32</b>	Pail 20 L T/H Steel Shell Yellow (1)	Nein	Refrigeration Oil S4 FR-F 32 / Pail
<b>Clavus R 46</b>	Pail 20 L T/H Steel Shell Yellow (1)	Nein	Refrigeration Oil S4 FR-F 46 / Pail
<b>Clavus R 68</b>	Pail 20 L T/H Steel Shell Yellow (1)	Nein	Refrigeration Oil S4 FR-F 68 / Pail
<b>Clavus SD 22-12</b>	Can 1 L Tinplate local (12)	Nein	keine 1 Liter Gebinde mehr verfügbar
	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 32 / Drum
	Pail 20 L Tinplate German Cuboid W (1)	Nein	Refrigeration Oil S4 FR-V 32 / Pail
<b>Clavus AB 100</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 100 / Drum
<b>Clavus AB 68</b>	Drum 209 L T/H RYtop (1)	Refrigeration Oil S2 FR-A 68 /	Refrigeration Oil S4 FR-V 68 / Drum
	Pail 20 L T/H Steel Shell Yellow (1)	Refrigeration Oil S2 FR-A 68 /	Refrigeration Oil S4 FR-V 68 / Pail
<b>Clavus SG 68</b>	Drum 209 L T/H RYtop (1)	Nein	Refrigeration Oil S4 FR-V 68 / Drum

