





### **FUCHS LUBRICANTS GERMANY**

### **Facts and figures**

Company: FUCHS LUBRICANTS GERMANY GmbH,

a company of the FUCHS Group

Locations: Based in Mannheim, with sites in

Bremen, Dohna, Hamburg, Kaiserslautern, Kiel and Wedel;

approx. 1,400 employees

**Product range:** A full range of more than 3,000 products

for all application areas

Certifications i. a.: ISO 9001, IATF 16949, ISO 14001, ISO 45001, ISO 50001, ISO 21469, HALAL, KOSHER (detailed certifications at www.fuchs.com/de/en)

CO, neutral production\*

Since 1931, we have been pursuing the same goal: to keep the world moving. With innovative and technological lubricant solutions that have a sustainable impact on the future. Unconditional reliability is our top priority, it is the foundation of our company and basis for everything that defines us.

Reliability is both a driver and a demand. And it's a promise to all our customers in the fields of automotive suppliers and OEMs, mechanical engineering, metal processing, mining and exploration, aerospace, energy, construction and transport, agriculture and forestry, as well as the paper, steel, metal, cement, forging and food industries, but also qualified lubricant dealers, car dealerships and workshops.

Long-term experience, high development strength and the fulfillment of far-reaching standards are the basis for the special quality of our world-leading product brands. We deliver solutions that are simply more efficient and therefore more sustainable. We always think in holistic solutions. For the development of individual solutions, we enter into an intensive customer dialog with you. This is the way we live up to our claim of moving your world.

### **MOVING YOUR WORLD**







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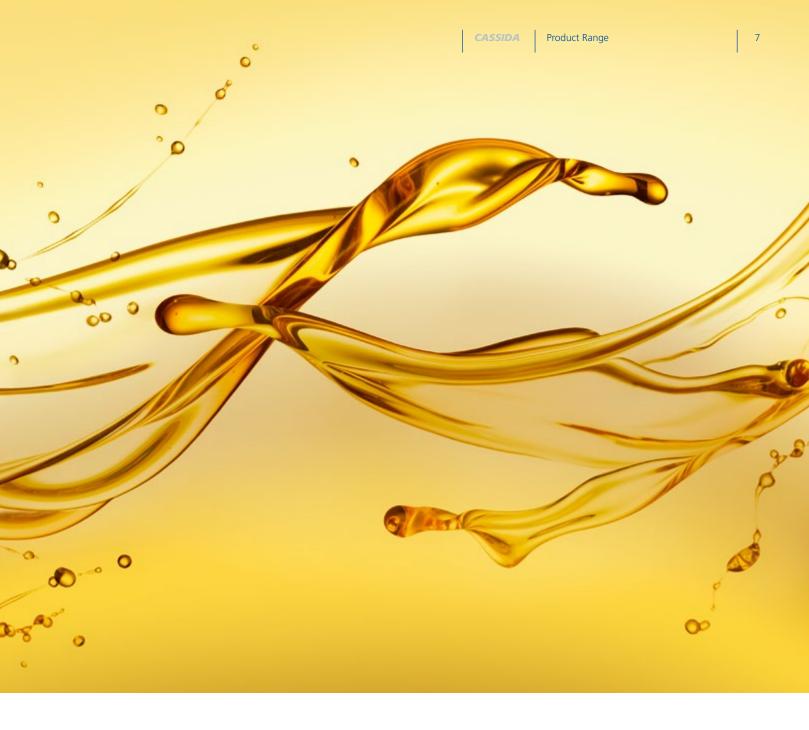
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### **FULLY SYNTHETIC PRODUCTS**

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# Industries Served by CASSIDA Food Grade Lubricants







### Beverage and brewing industry

The production of food, beverages and related products puts the strictest requirements on the lubricants used in the manufacturing process. Consumer protection is absolutely essential. Incidental oil contamination during the bottling and canning process must be avoided by breweries and beverage manufacturers, who brew, mix, can and bottle millions of gallons of beverages for global markets every year.

### Meat and poultry industry

Millions of pounds of meat and poultry are processed every year. Just as in all other food industries, the safety of the production process is crucial. CASSIDA food grade lubricants support this safety. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

### **Dairy industry**

Customers from the dairy industry as well as the other food-related industries benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment. This assures that the highest demands of the industry are met.







### **Bakery and confectionery industry**

With the high temperatures required by the bakery and confectionery industry, high heat resistance and stability of the lubricant is crucial. FUCHS LUBRICANTS GERMANY'S research into extreme applications ensures that CASSIDA food grade lubricants perform at the highest level to allow for safe and reliable production and manufacturing processes.

### **Animal feed industry**

Only safe feed will allow safe food to be produced. CASSIDA food grade lubricants provide this safety to the producers of animal feed. The products comply with the vast variety of feed requirements for livestock and other animals – from dairy cows and poultry to pets and fish.

### **Edible oil processing industry**

In modern cuisine and with changing eating habits, edible oil, such as olive oil, sunflower oil and rapeseed oil, play an integral role in our diets. With CASSIDA food grade lubricants, FUCHS LUBRICANTS GERMANY offers a wide choice of lubricating fluids and greases for safe and efficient lubrication of the production processes.

# Serving the Highest Safety Standards of the Food and Beverage Industry

### Our product portfolio - at a glance

Lubricants for the production, processing and packaging of food, beverages, medications and cosmetic products must fulfil stringent requirements. Consumer protection is crucial, which is why FUCHS LUBRICANTS GERMANY practises the highest safety standards in all aspects of development, production, sales and after-sales service.

FUCHS LUBRICANTS GERMANY customers benefit from the excellent quality of the CASSIDA product line, which has OEM approvals from well-known manufacturers of production and manu-facturing equipment.

FUCHS LUBRICANTS GERMANY food grade lubricants are formulated with the most advanced rust and oxidation, anti-wear and extreme-pressure additives available, all of which provide the maximum level of protection for your expensive food processing equipment. From hydraulic systems and transmissions to bearings and compressors: close cooperation already during the development phase pays off for our customers.

### Safety, our number one priority

All lubricants for the production, processing and packaging of food, beverages, medications and cosmetic products must fulfil stringent requirements. Consumer protection is crucial, which is why food safety is very important in all aspects of development, production, sales and after-sales service. This is the reason why all of our food grade lubricants are registered by NSF International in accordance with the respective food-related categories.

Our manufacturing plant in Kaisers-lautern as well as the food grade lubricants produced there are certified in accordance with the international standard ISO 21469. This standard determines the hygienic requirements for the composition, manufacturing and use of lubricants that may have incidental contact with food products – assuring that our products fulfil the highest possible safety standard.

Additionally, our CASSIDA products fulfil the strict requirements of both Jewish and Muslim laws and regulations. The respective Kosher and Halal certificates guarantee the highest possible level of product and food safety.

# Our most important product: individual consulting and service

We set standards not only with our high-performance products, but also with our exceptional service! This includes providing advice on how to optimise the use of food grade lubricants taking into account stringent QA management procedures in order to avoid food contamination (in accordance with HACCP = Hazard Analysis and Critical Control Points), examination of used lubricants, development of lubrication and maintenance schedules, support in changing lubricants, active support for practical testing, careful documentation of all measures and much more.

Finding comprehensive, sustainable and safe solutions for all tribological issues arising from our customers' requirements and their applications is our declared goal. Customer seminars and training sessions held globally complete our service programme.

With its competent technical advice and widespread sales network, our global Food Division team supports you in your production and processing activities to ensure that you will always achieve optimal results.

NSF registered ISO certified



Kosher certified



Halal certified



Company Member



In Partnership with



### **Guide to Symbols**



Roller bearings



Can seamers and sterilisers



Extreme pressure



Compressors



Slideways



Anti-corrosive



Plain bearings



Chains



Industrial coolants



Direct food contact



Mounting/assembling/ disassembling aid



NSF registered



Flushing



Conveyors



Heat transfer



Sugar dissolving



Maintenance aid



High temperature



Gears – open



Hydraulics



Vacuum pumps



Worm gears



.



Gears – enclosed



Valves, taps and fittings



Maintenance spray



Linkages, pins



# **CASSIDA FLUIDS**

CASSIDA lubricating fluids based on fully synthetic base oils are developed to meet related industry specifications and to fulfil the stringent guidelines governing food-compatible lubricants. The high-performance lubricating fluids of the CASSIDA range enable the efficient operation of demanding manufacturing processes, a higher degree of utilisation of machines and a reduction in maintenance costs. They are used in various branches of the food and beverage industry.

FUCHS LUBRICANTS GERMANY's extensive range of food grade lubricating fluids offers the user a wide choice of CASSIDA-branded products for lifetime and total loss lubrication. In addition to mineral-oil-based fluids, a very diverse selection of synthetic lubricating fluids are available for a wide range of applications in the food and beverage industry.

These high-performance lubricating fluids enable the efficient operation of demanding production and manufacturing processes, a higher degree of utilisation of machines and a reduction in maintenance.

FUCHS LUBRICANTS GERMANY researches constantly to increase performance and offer optimum lubricating fluids for maximum safety in food grade applications.



# CASSIDA Fluids (fully synthetic)

Chain Oils
CASSIDA CHAIN OIL 150   320 SPRAY   460   1500   1500 SPRAY   5000 SPRAY 14
CASSIDA CHAIN OIL LT   LT SPRAY14
CASSIDA CHAIN OIL SP
CASSIDA CHAIN OIL HTE
CASSIDA CHAIN OIL XTE15
CASSIDA CHAIN OIL HTX15
Compressor Fluids
CASSIDA FLUID CR 32   46   68   100   150
CASSIDA FLUID RF 46   68
Direct Contact Fluids - Multiple Applications
CASSIDA FLUID DC 20   32
CASSIDA FLUID DCE 15   DCE 15 SPRAY 16
Gear Fluids
CASSIDA FLUID GL 150   220   320   460   680
CASSIDA FLUID GLE 150   220
CASSIDA FLUID WG 220   320   460   680   1000
Hydraulic Oils
CASSIDA FLUID HF 15   32   46   68   100
CASSIDA FLUID HFS 15   32   46   68   100
Vacuum Pump Fluids
CASSIDA FLUID VP 68   100
Maintenance Fluids and Specialties
CASSIDA FLUID FL 5   FL 5 SPRAY
CASSIDA SILICONE FLUID   CASSIDA SILICONE FLUID SPRAY
CASSIDA PTFE DRY SPRAY
CASSIDA FLUID CP   CASSIDA FLUID CP SPRAY
CASSIDA COOLANT

### **CHAIN OILS**

### CASSIDA CHAIN OIL | 150 | 320 Spray | 460 | 1500 | 1500 Spray | 5000 Spray

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA CHAIN OIL 150	150	19	-30 to +140 (upper peak: +150)	
CASSIDA CHAIN OIL 320 SPRAY	320*	34*	-40 to +140 (upper peak: +150)	
CASSIDA CHAIN OIL 460	460	43	-30 to +140 (upper peak: +150)	
CASSIDA CHAIN OIL 1500	1500	135	-30 to +140 (upper peak: +150)	
CASSIDA CHAIN OIL 1500 SPRAY	1500*	135*	-10 to +140 (upper peak: +150)	
CASSIDA CHAIN OIL 5000 SPRAY	5000*	350*	-10 to +100 (upper peak: +150)	
Fully synthetic, very high-performance chain oils. Highly resistant to fling-off or wash-off. Excellent protection against wear and corrosion.			e and transport chains i lubrication systems or s	n the food industry. Can be praying.

\*after evaporation of solvent

### CASSIDA CHAIN OIL LT | LT Spray

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
Cassida Chain Oil Lt	32	6.5	-50 to +140 (lower peak: -60)	
Cassida Chain oil lt spray	32*	6.5*	-50 to +120 (lower peak: -60)	
Fully synthetic, high-performance anti-wear chain oil suitable for a wide range of temperatures, including sub-zero conditions.	<b>Main application:</b> Transport mechanisms inside food freezers such as spiral freezers. Lubrication of metal-metal and metal-ceramic contact points in open machinery, such as slideways and chains. Plain and anti-friction bearings.			

\*after evaporation of solvent

### **CASSIDA CHAIN OIL SP**

SSF NSF	Viscosity at 40°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications
Cassida Chain Oil Sp	85	460*	-30 to +140 (upper peak: +150)	
Fully synthetic, high-performance, anti-wear chain oil with excellent creeping and penetrating features.		spindles and guide p		lustry, slideways, levers, joint r use in equipment for mani

\*after evaporation of solvent

### **CASSIDA CHAIN OIL HTE**

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications	
Cassida Chain oil hte	220	20	-25 to +240		
Fully synthetic, ester-based, high-temperature chain lubricant suitable for temperatures of up to 240°C.	<b>Main application:</b> Drive and transport chains in the food industry. Also intended for use in equipment for manufacturing food packaging.				

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### **CHAIN OILS**

### **CASSIDA CHAIN OIL XTE**

MSF NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range oven [°C]	Specifications
CASSIDA CHAIN OIL XTE	194	18	-20 to +300	
Fully synthetic high-temperature chain lubricant with exceptional thermal stability.	<b>Main application:</b> Drive and transport chains in the food industry (e.g. bakeries). Also intended for use in equipment for manufacturing food packaging.			

### **CASSIDA CHAIN OIL HTX**

OCCOOL SEE	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications	
CASSIDA CHAIN OIL HTX	330	40	-15 to >+300		
Fully synthetic, extreme-temperature chain lubricant suitable for temperatures up to more than 300°C.	t- <b>Main application:</b> Drive and transport chains in the food industry (e.g. bakeries). Also intended for use in equipment for manufacturing food packaging.				

### **COMPRESSOR FLUIDS**

# CASSIDA FLUID CR 32 | 46 | 68 | 100 | 150

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID CR 32	32	6.1	-30 to +100 (upper peak: +120)	DIN 51506 VBL, VCL, VDL
CASSIDA FLUID CR 46	46	8.0	-30 to +100 (upper peak: +120)	DIN 51506 VBL, VCL, VDL
CASSIDA FLUID CR 68	68	11	-30 to +100 (upper peak: +120)	DIN 51506 VBL, VCL, VDL
CASSIDA FLUID CR 100	100	14	-30 to +100 (upper peak: +120)	DIN 51506 VBL, VCL, VDL
CASSIDA FLUID CR 150	150	19	-30 to +100 (upper peak: +120)	DIN 51506 VBL, VCL, VDL
Fully synthetic, very high-perfomance, long-life compressor oils. Meet DIN 51506 VBL, VCL, VDL and ISO 6743-3A DAH, DAG, DAJ specifications.	Main application plants.	: Oil-flooded rotary	vane and screw air com	npressors in food processing

### CASSIDA FLUID RF 46 | 68

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID RF 46	46	7.8	-40 to +100 (upper peak: +140)	DIN 51501-1
CASSIDA FLUID RF 68	68	9.7	-40 to +100 (upper peak: +140)	DIN 51501-1
Fully synthetic lubricants for refrigeration compressors used in the food industry.	<b>Main application:</b> Recommended for use in open- and semi-open compressors, both screw and reciprocating types. Designed for applications with ammonia (R717), offering excellent performance under high and low evaporation temperatures. Can also be used with halogenated hydrocarbons (R22) and isobutane (R600a).			

### **DIRECT CONTACT FLUIDS - MULTIPLE APPLICATIONS**

### CASSIDA FLUID DC 20 | 32

	Viscosity at	Viscosity at	Temperature	Specifications
	40°C [mm²/s]	100°C [mm²/s]	range [°C]	
CASSIDA FLUID DC 20	23	4.8	-40 to +100	
CASSIDA FLUID DC 32	32	6	-40 to +100	
Fully synthetic, multipurpose, low-volatility fluids suitable for both direct and incidental food contact applications. Can handle a wide range of application temperatures and have excellent thermal and oxidative stability to minimise cracking and promote long service life.	Main application: In absorber oil columns designed to remove traces of hexane from steam/air/hexane mixtures. As forming oil for the manufacture of both two- and three-piece cans for the food and beverage industry. In closed circuit and pressureless heat transfer systems with a bulk oil temperature of approximately -30°C to 280°C where direct food contact may occur.			

### CASSIDA FLUID DCE 15 | CASSIDA FLUID DCE 15 Spray

→ NSF	Viscosity at 20°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID DCE 15	31	14.8	-10 to +110 (upper peak: +120)	
CASSIDA FLUID DCE 15 SPRAY	31*	14.8*	-10 to +110 (upper peak: +120)	
Synthetic multifunctional mineral oil hydrocarbon free direct contact fluid for food processing applications in the food manufacturing industry.	<b>Main application:</b> Release agent used on grills, loaf pans, cutters, boning benches, chopping blocks or other hard surfaces to help prevent food from adhering during processing. Dough Divider lubrication and forming oil for the manufacture of both two and three piece cans for food and beverages (stamping, deep drawing and bending). Stamping and deep drawing of aluminium foils for food-packaging. Lubrication of lightly loaded chains.			

\*without propellant

### **GEAR FLUIDS**

### CASSIDA FLUID GL 150 | 220 | 320 | 460 | 680

(Se) (NSF)	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID GL 150	150	19	-45 to +140 (upper peak: +150)	DIN 51517 CLP / DIN 51506 VBL, VCL
CASSIDA FLUID GL 220	220	25	-40 to +140 (upper peak: +150)	DIN 51517 CLP / DIN 51506 VBL
CASSIDA FLUID GL 320	320	33	-35 to +140 (upper peak: +150)	DIN 51517 CLP
CASSIDA FLUID GL 460	460	44	-35 to +140 (upper peak: +150)	DIN 51517 CLP
CASSIDA FLUID GL 680	680	59	-30 to +140 (upper peak: +150)	DIN 51517 CLP
Fully synthetic, very high-perfomance, long-life, anti-wear gear oils. Meet DIN 51517 CLP and ISO 6743/6 specifications.	<b>Main application:</b> Suitable for gearboxes on food handling and processing equipment. May also be used for general machine lubrication, for example, on chains.			

### CASSIDA FLUID GLE 150 | 220

© O NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID GLE 150	150	19	-40 to +140 (upper peak: +150)	DIN 51517 CLP
CASSIDA FLUID GLE 220	220	25	-40 to +140 (upper peak: +150)	DIN 51517 CLP

Fully synthetic, high-performance, anti-wear gear fluids for use in the food canning industry. Provides excellent lubrication, even when operating in locations where the product may be subject to contamination with water, juice and food. CASSIDA FLUID GLE holds these contaminants in suspension, thus protecting metal surfaces from wear and corrosion. Approved by Angelus Sanitary Can Seaming Company for can seamer lubrication.

**Main application:** Lubrication of rotary can seaming machines, including both enclosed and total loss systems, and for circulating and bearing oil systems where contamination with water or food juices can occur.

### CASSIDA FLUID WG 220 | 320 | 460 | 680 | 1000

Sign of the state	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID WG 220	220	42	-35 to +160	DIN 51517 CLP
CASSIDA FLUID WG 320	320	61	-35 to +160	DIN 51517 CLP
CASSIDA FLUID WG 460	460	83	-30 to +160	DIN 51517 CLP
CASSIDA FLUID WG 680	680	122	-25 to +160	DIN 51517 CLP
CASSIDA FLUID WG 1000	1000	163	-25 to +160	DIN 51517 CLP

Fully synthetic, high-performance gear lubricants for worm gearboxes. High resistance to micro-pitting. Provides exceptional thermal stability and corrosion protection. Exceptional low-friction characteristics providing efficient power transmission. Meet DIN 51717 CLP and ISO 6743/6 specifications.

**Main application:** For the lubrication of worm gearboxes in food processing plants. Ideal for all worm gear applications. Suitable for use in situations where equipment gets routinely cleaned before and after use and where water might enter the lubricant.

### **HYDRAULIC OILS**

### CASSIDA FLUID HF 15 | 32 | 46 | 68 | 100

=(7)= (S) NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID HF 15	15	3.6	-65 to +100 (upper peak: +120)	DIN 51524 HLP
CASSIDA FLUID HF 32	32	6	-60 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP
Cassida fluid HF 46	46	8	-59 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP
CASSIDA FLUID HF 68	68	11	-52 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
Cassida fluid HF 100	100	14	-45 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
Fully synthetic, high-performance, long-life, anti-wear hydraulic oils. Meet ISO 6743/4 HM, DIN 51524 HLP, HVLP and anti-friction bearings on food handling and processing equipment.				

Fully synthetic, high-performance, long-life, anti-wear hydraulic oils. Meet ISO 6743/4 HM, DIN 51524 HLP, HVLI and DIN 51517 CLP (ISO 68 and ISO 100) specifications.

### CASSIDA FLUID HFS 15 | 32 | 46 | 68 | 100

=(7)= (8) NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID HFS 15	15	4	-62 to +100 (upper peak: +120)	DIN 51524 HLP
CASSIDA FLUID HFS 32	32	6	-60 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
CASSIDA FLUID HFS 46	46	8	-60 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
CASSIDA FLUID HFS 68	68	11	-50 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
CASSIDA FLUID HFS 100	100	15	-45 to +140 (upper peak: +150)	DIN 51524 HLP, HVLP DIN 51517 CLP
Fully synthetic, high-performance, long-life, anti-wear hydraulic oils with boosted solvency and lubricity. Resist the formation of harmful oxidation products, even at elevated temperatures. Meet ISO 6743/4 HV and DIN 51524 HLP,	<b>Main application:</b> Hydraulic systems, hydrostatic gears and control systems, plain and anti-friction bearings on food handling and processing equipment. Can be used on demanding injection moulding machinery.			

### **VACUUM PUMP FLUIDS**

### CASSIDA FLUID VP 68 | 100

HVLP and DIN 51517 CLP (HFS 68) specifications.

O O O O O O O O O O O O O O O O O O O	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID VP 68	68	10.5	-45 to +120 (upper peak: +140)	DIN 51506 VBL, VCL, VDL
CASSIDA FLUID VP 100	100	14	-40 to +120 (upper peak: +140)	DIN 51506 VBL, VCL, VDL
Fully synthetic, high-performance vacuum pump oils.	<b>Main application:</b> Vacuum pumps producing a medium vacuum, used in the food and beverage processing and packing industry.			

### **MAINTENANCE FLUIDS and SPECIALTIES**

### CASSIDA FLUID FL 5 | FL 5 Spray

odour and taste.

III NSF	Viscosity at 20°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FLUID FL 5	3.8	1.1	n.a.	
CASSIDA FLUID FL 5 SPRAY	3.8*	1.1*	-60 to +110	
Fully synthetic penetrating fluid with excellent creeping and penetrating features. Capillary effect allows quick penetration between rusty and encrusted contact surfaces. Lubricates and protects against corrosion. Has a neutral	<b>Main application:</b> Penetrating fluid for use in food grade equipment. Can be used for the disassembling of screws, interlocking nuts and other components. Offers corrosion protection for metal components. Can be used for lubrication of various non-demanding applications where food grade lubricants are required.			

\*without propellant

### CASSIDA SILICONE FLUID | CASSIDA SILICONE FLUID Spray

	Viscosity at 25°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA SILICONE FLUID	350	270	-40 to +200 (upper peak: +220)	
CASSIDA SILICONE FLUID Spray	1000*	730*	-40 to +200 (upper peak: +220)	
Silicone-based, fully synthetic, multipurpose fluid. Thermal stability up to 250°C. Excellent adhesive properties minimise fling-off in use and wash-off by both cold and hot water. Readily displaces water. Formulated for use on metal-to-non-metal or non-metal-to-non-metal contact surfaces.			conveyors; slow rotatin	g machinery; small, slow- ood industry.

\*without propellant

### **CASSIDA PTFE DRY Spray**

	Viscosity at 20°C [mm²/s]	Temperature range [°C]			
CASSIDA PTFE DRY SPRAY	0.8*	-50 to +270			
Synthetic PTFE multipurpose and maintenance lubricant, based on a unique blend of components.	<b>Main application:</b> For use on belts, cams, chains, cables, conveyors, sliding tracks, joints, pivots, lifts, pulleys, threaded parts, bolts, rollers, taps, valves and many other moving parts. For lubrication and protection of seals and guides, operating in food, pharmaceutical and other clean environments where incidental food contact is possi				

\*including solvent

### **MAINTENANCE FLUIDS and SPECIALTIES**

### CASSIDA FLUID CP | CASSIDA FLUID CP Spray

NSF.	Viscosity at 20°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications				
CASSIDA FLUID CP	4.9*	3.8*	n.a.					
CASSIDA FLUID CP SPRAY	4.9**	3.8**	-30 to +100					
Easy-to-handle, fully synthetic corrosion protection fluid with excellent yield for use in machinery in the food and beverage processing and packaging industry.  Provides a thin, highly efficient molecular film on	<b>Main application:</b> Protection for machinery of all kind during shipping and distribution. For metal parts and tools after galvanic conditioning and cleaning processes. For gearbox housings, gear-wheels, couplings, driveshafts, measuring tools, precision tools, etc. As a temporary protection of sub-assemblies.							

\* including solvent

### **CASSIDA COOLANT**

components.

₩ I NSF	Viscosity at 20°C [mm²/s]	Viscosity at 40°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA COOLANT	47	17	-45 to +120	

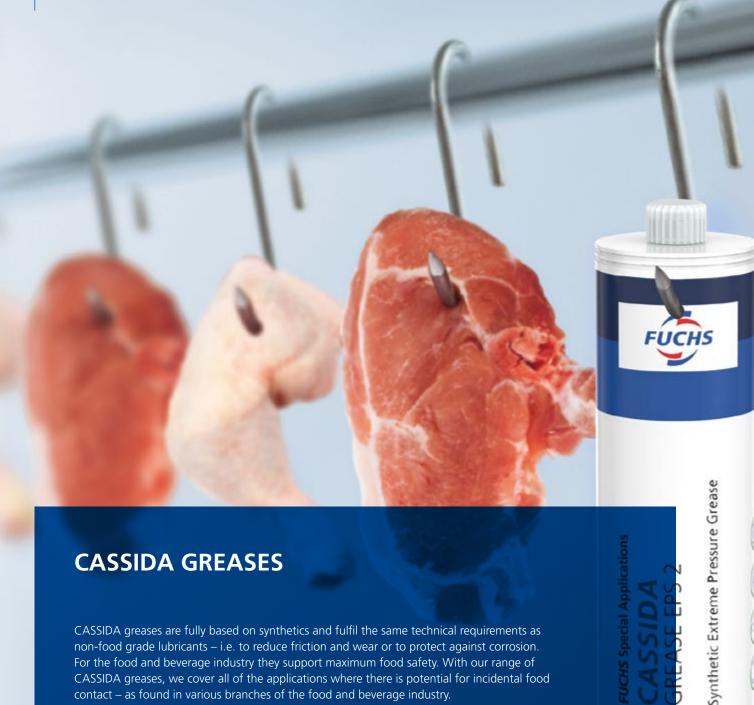
Propylene-glycol-based fluid containing anti-corrosion additives, for use in closed systems to chill, cool or heat food or beverages in food industry applications. Designed to be used in mixtures with potable water. Suitable for operation in the range of -45°C to 120°C.

Main application: Secondary cooling, or heating, in the food and beverage industry. For use in closed cooling systems, including those where there is potential for incidental food contact. Not to be used for applications where there is direct contact between food and the coolant.

<sup>\*\*</sup> without propellant, including solvent

For your notes	





# **CASSIDA GREASES**

CASSIDA greases are fully based on synthetics and fulfil the same technical requirements as non-food grade lubricants – i.e. to reduce friction and wear or to protect against corrosion. For the food and beverage industry they support maximum food safety. With our range of CASSIDA greases, we cover all of the applications where there is potential for incidental food contact – as found in various branches of the food and beverage industry.

Included in the CASSIDA range of greases are direct contact lubricants which are both NSF H1 and also 3H registered for safety. This means the lubricants are acceptable for incidental contact with food as well as for use as release agents on hard surfaces which are in direct contact with meat and poultry.

Our CASSIDA GREASE EPS range of lubricants has been developed to provide high performance and wear protection for machinery operating at high pressures and loads. At slower speeds, high pressures and high loads, a heavy-duty grease is required which helps protect machinery. We provide CASSIDA greases that are specifically designed for heavy-loaded and shock-loaded applications.

Other product series include highly water-resistant greases, assembly pastes and low-temperature greases.



Regular Load CASSIDA GREASE RLS 000   00   0   1   2	24
Extreme Pressure	
CASSIDA GREASE EPS 00   1   2	24
Heavy Duty	
CASSIDA GREASE HDS 00   2	24
Specialties	
CASSIDA GREASE GTS 2   GTS SPRAY	25
CASSIDA GREASE GTM 2	25
CASSIDA GREASE GTX 2   0	25
CASSIDA GREASE HTS 2	25
CASSIDA GREASE LTS 1	26
CASSIDA GREASE P 1	26
LASSIDA GREASE P.T	20
CASSIDA GREASE P I	
CASSIDA GREASE CLEAR 2CASSIDA GREASE MD 2	26 26
	26 26

### **REGULAR LOAD**

### **CASSIDA GREASE RLS 000 | 00 | 0 | 1 | 2**

© © III NSF	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE RLS 000	AlCx	100	13	-50 to +100 (upper peak: +120)	<000	
CASSIDA GREASE RLS 00	AlCx	100	13	-45 to +100 (upper peak: +120)	00	
CASSIDA GREASE RLS 0	AlCx	150	18	-40 to +100 (upper peak: +120)	0	
CASSIDA GREASE RLS 1	AlCx	150	18	-40 to +120 (upper peak: +140)	1	
CASSIDA GREASE RLS 2	AlCx	150	18	-35 to +120 (upper peak: +140)	2	
High performance regular load aluminium complex	Main annli	estion. For use	on boarings	bushings and linkages	on food	

High-performance, regular-load aluminium complex greases with synthetic base fluid.

**Main application:** For use on bearings, bushings and linkages on food manufacturing equipment. CASSIDA GREASE RLS 0 and 00 are particulary recommended for centralised lube systems or other similiar systems where an NLGI  ${\bf 2}$ grease may be difficult to dispense.

### **EXTREME PRESSURE**

### CASSIDA GREASE EPS 00 | 1 | 2

© © © EP NSF	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE EPS 00	AlCx	220	25	-45 to +100 (upper peak: +120)	00	
CASSIDA GREASE EPS 1	AlCx	220	25	-40 to +120 (upper peak: +140)	1	
CASSIDA GREASE EPS 2	AlCx	220	25	-35 to +120 (upper peak: +140)	2	
High-performance, extreme-pressure aluminium complex greases with synthetic base fluid.				s, bushings and linkag where high pressure a		

temperatures and water spray occur. CASSIDA GREASE EPS 00 is especially recommended for centralised lube sytems and enclosed gears.

### **HEAVY DUTY**

### CASSIDA GREASE HDS 00 | 2

OO DEP SON	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE HDS 00	AICX	800	68	-35 to +120 (upper peak: +120)	00	
CASSIDA GREASE HDS 2	AlCX	800	68	-35 to +120 (upper peak: +140)	2	

High-performance, high-viscosity heavy-duty aluminium complex greases with synthetic base fluid.

Main application: For use on bearings, bushings and linkages on food manufacturing equipment, particulary where slower speeds, high pressure and loads, high temperatures and water spray are present. CASSIDA GREASE HDS 00 is recommended for open gears and centralised lube systems.

### **SPECIALTIES**

### CASSIDA GREASE GTS 2 | GTS SPRAY

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE GTS 2	CSX	85	12.8	-45 to +170 (upper peak: +200)	2	
Cassida grease gts spray	CSX	85	12.8**	-45 to +170 (upper peak: +200)	2*	
Speciality extreme-pressure calcium sulphonate complex greases with synthetic base fluid. Excellent extreme pressure, anti-wear and corrosion prevention properties.				f electric motors, pump ings operating up to 170		mixers,

\*\*without propellant

### **CASSIDA GREASE GTM 2**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*		
CASSIDA GREASE GTM 2	CSX	220	25	-40 to +160	2			
Specialty synthetic extreme-pressure grease for food and beverage processing equipment.	<b>Main application:</b> For use on bearings of electric motors, pumps, conveyors, mixers and robotic applications.							

### CASSIDA GREASE GTX 0 | 2

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*		
CASSIDA GREASE GTX 0	CSX	460	44	-35 to +160 (upper peak: +200)	0			
CASSIDA GREASE GTX 2	CSX	460	44	-35 to +180 (upper peak: +220)	2			
High-performance, extreme-pressure calcium sulphonate complex grease with synthetic base fluid. Excellent extreme pressure, anti- wear and corrosion prevention properties.	Main application: For use on bearings of electric motors, pumps, conveyors, mixers, gear units and bearings. Heavy-loaded and shock-loaded applications with low- to medium-speed bearings operating up to 180°C, such as machines used to process pet food and animal feed.							

### **CASSIDA GREASE HTS 2**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*		
CASSIDA GREASE HTS 2	Inorganic	400	40	-30 to +200 (upper peak: +220)	2			
Inorganically thickened grease with synthetic base fluid.	<b>Main application:</b> Suitable for applications on food manufacturing equipment where high temperatures (peak 220°C) may be experienced.							

### **SPECIALTIES**

### **CASSIDA GREASE LTS 1**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE LTS 1	AlCx	20	4.5	-50 to +100 (upper peak: +110)	1	
High-performance aluminium complex grease with low-viscosity synthetic base fluid.		Particulary recor		ushing and linkages on t use in cold storage situat		

### **CASSIDA GREASE P 1**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*	
CASSIDA GREASE P 1	Inorganic	770	65	-30 to +150 (upper peak: +180)	1		
Specialty high-performance grease. Inorganically thickened with fully synthetic base fluids.	ened <b>Main application:</b> Lubrication of heavily loaded plain or roller bearings, joints, linkages and slides up to 150°C (peak 180°C) and protection of seals and guides.						

### **CASSIDA GREASE CLEAR 2**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*	
CASSIDA GREASE CLEAR 2	Inorganic	75	11.5	-30 to +170	2		
Inorganically thickened clear grease with synthetic base fluid and highly micronised white solid lubricant (PTFE).	<b>Main application:</b> Lubrication of plain or roller bearings, joints, linkages and slides. Lubrication and protection of seals and guides, operating in food, pharmaceutical and other clean environments.						

### **CASSIDA GREASE MD 2**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE MD 2	PTFE	650	250	-40 to +200 (upper peak: +250)	2–3	

High-performance, silicone-based speciality grease specially developed for the lubrication and sealing of taps, valves and fittings with EPDM seals. Suitable for use with other seal materials normally used in food machinery lubrication systems. Good resistance to hot water, steam and disinfectant solutions.

**Main application:** Taps, flow meters and fittings used for the handling of water, drinks and beer. Seals on autoclaves and sterilisers. Suitable for continuous operation at temperatures up to 180°C and short-term exposure to temperatures not exceeding 250°C.

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### **SPECIALTIES**

### CASSIDA GREASE FC 1 | 2

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA GREASE FC 1	PTFE	510	47	-25 to +260 (upper peak: +280)	1	
CASSIDA GREASE FC 2	PTFE	510	47	-25 to +260 (upper peak: +280)	2	

Fully synthetic, high-performance, high-temperature greases for the filled-for-life lubrication of bearings and seals used in extreme temperatures and/or aggressive environments. Effective anti-corrosion prevention characteristics. Excellent elastomer compatibility. Suitable for applications where components might be exposed to reactive chemicals and gases; chemically inert or non-reactive in the event of contact with strong acids, alkalis and halogens. Excellent elastomer compatibility.

**Main application:** Plain/roller bearing elements, joints, microbearings, precision tools, linkages and mechanical seals. Suitable for continuous operation at temperatures up to 260°C and short-term exposure to temperatures not exceeding 300°C.

### **CASSIDA PASTE AP**

哥 NSF	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*
CASSIDA PASTE AP	Inorganic	85	12	-40 to +1200	1	
Synthetic assembly/disassembly paste for food and beverage processing equipment.	<b>Main application:</b> Assembly and disassembly paste with an extremely large range of applications, for example, screw paste for high-alloy steels to optimise the tightening torque, mounting and pressing of bearings, and disks, wheels and bolts, for the lubrication of adjusting mechanisms as well as for drifting, bending, punching, pressing and stamping. Protects from fretting corrosion. Protects from seizing – easy disassembling.					



# For your notes



# **CASSIDA FM RANGE**

The FM Series of the CASSIDA product portfolio are white-oil-based or semi-synthetic-based food grade lubricating fluids and greases. They are used in similar applications as the CASSIDA series. Especially in cases of total loss lubrication FM lubricants are preferred – as found for example in the animal feed and beverage industry.

# **CASSIDA FM Range (semi-synthetic or white-oil-based)**

Hydraulic Oils	
CASSIDA FM HYDRAULIC OIL 32   46   68   100	32
Gear Oils	
CASSIDA FM GEAR OIL TLS 150	32
CASSIDA FM GEAR OIL 220   460	32
Specialties	
CASSIDA FM FLUID DC 20   68	33
CASSIDA FM FLUID RC 150   220	33
CASSIDA FM FLUSHING FLUID 32	33
CASSIDA FM HEAT TRANSFER FLUID 32	33
CASSIDA FM SUGAR DISSOLVING FLUID	34
Greases	
CASSIDA FM GREASE DC 2   FM GREASE DC SPRAY	34
CASSIDA FM GREASE EP 1.5	34
CASSIDA FM GREASE HD 1.5   2	35

# **Application Equipment**

Grease Gun	
HD GREASE GUN CASSIDA	35

### **HYDRAULIC OILS**

### **CASSIDA FM HYDRAULIC OIL 32 | 46 | 68 | 100**

SSF = (V)= NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications	
CASSIDA FM HYDRAULIC OIL 32	32	5.7	0 to +110 (upper peak: +120)	DIN 51524 HLP	
CASSIDA FM HYDRAULIC OIL 46	46	7	0 to +110 (upper peak: +120)	DIN 51524 HLP	
CASSIDA FM HYDRAULIC OIL 68	68	9	0 to +110 (upper peak: +120)	DIN 51524 HLP	
CASSIDA FM HYDRAULIC OIL 100	100	11.5	0 to +110 (upper peak: +120)	DIN 51524 HLP	
Hydraulic fluids for food and beverage processing equipment.	Main application: Hydraulic systems, hydrostatic gears and control systems, plain and anti-friction bearings on food handling and processing equipment.				

### **GEAR OILS**

### **CASSIDA FM GEAR OIL TLS 150**

So III NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FM GEAR OIL TLS 150	150	15	0 to +110 (upper peak: +120)	DIN 51517 CLP
Speciality anti-wear gear lubricant specifically designed for use in the food and beverage canning industry. Provides good lubrication even when operating in locations where it is subject to contamination with water, juice and food. Holds these contaminants in suspension, thus protecting metal surfaces from wear and corrosion. Only to be used for total loss systems.			mer gearboxes on food ha al machine lubrication.	andling and processing

### CASSIDA FM GEAR OIL 220 | 460

(Signature) NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications		
CASSIDA FM GEAR OIL 220	220	20	0 to +110 (upper peak: +120)	DIN 51517 CLP		
CASSIDA FM GEAR OIL 460	460	30	0 to +110 (upper peak: +120)	DIN 51517 CLP		
Gear lubricants for food and beverage processing equipment.	<b>Main application:</b> Suitable for gearboxes on food handling and processing equipment. May also be used for general machine lubrication or as a flushing fluid.					

### **SPECIALTIES**

### CASSIDA FM FLUID DC 20 | 68

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications		
CASSIDA FM FLUID DC 20	22	4	0 to +120 (upper peak: +130)			
CASSIDA FM FLUID DC 68	68	9.5	0 to +120 (upper peak: +130)			
White mineral oil, multipurpose, low-volatility fluids suitable for both direct and incidental food contact applications. Can handle a wide range of applications.	Main application: Absorber oils for edible oil extraction plant solvent recovery systems.  Release agent used on grills, loaf pans, cutters, boning benches, chopping blocks or other hard surfaces to help prevent food from adhering during processing. Forming oils for the manufacture of both two- and three-piece cans for food and beverages.					

### CASSIDA FM FLUID RC 150 | 220

Sign Inst	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications
CASSIDA FM FLUID RC 150	150	15.5	-10 to +140 (upper peak: +150)	DIN 51517 CLP
CASSIDA FM FLUID RC 220	220	20.4	-10 to +140 (upper peak: +150)	DIN 51517 CLP
Special high-performance fluids specially developed for use in rotary cooking equipment in food and beverage canning plants. Provide good lubrication even when operating in locations where they are subject to contamination with water.			tralised systems of rota es and other moving co	ary cookers and sterilisers imponents.

### **CASSIDA FM FLUSHING FLUID 32**

® → ® NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications				
CASSIDA FM FLUSHING FLUID 32	31	5.2	-10 to +150 (upper peak: +325)	DIN 51522 Q				
Specialty cleaning and flushing concentrate for heat transfer systems operating in the food and beverage industry.	<b>Main application:</b> FM FLUSHING FLUID 32 is recommended for use in closed heat transfer systems which suffer from carbon formation due to thermal and oxidative degradation.							

### **CASSIDA FM HEAT TRANSFER FLUID 32**

	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications			
CASSIDA FM HEAT TRANSFER FLUID 32	35	6	0 to +325 (upper peak: +340)	DIN 51522 Q			
High-performance heat transfer fluid. Can handle a wide range of application temperatures and has excellent thermal and oxidative stability to minimise cracking and promote long service life.	<b>Main application:</b> For closed-circuit and pressureless heat transfer systems with a bulk oil temperature range of approximately -10°C to max. +325°C where the surface temperature of the heating elements (oil film temperature) should not exceed +340°C.						

### **SPECIALTIES**

### **CASSIDA FM SUGAR DISSOLVING FLUID**

NSF NSF	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	Specifications			
CASSIDA FM SUGAR DISSOLVING FLUID	36	5.7	n.a.				
Emulsifiable oil-based cleaning and rust protecting concentrate. Designed to be used in mixtures with potable water on machine surfaces in the food and sugar manufacturing industry.	<b>Main application:</b> For cleaning and flushing sugar or sugar-based deposits from food and beverage manu-facturing equipment. For freeing moving parts or screws and bolts that are stuck with sugar deposits. For lubrication of lightly loaded bearings and slideways, especially where sugar deposits are likely to form.						

### **GREASES**

### CASSIDA FM GREASE DC 2 | CASSIDA FM GREASE DC SPRAY

NSF	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*	
CASSIDA FM GREASE DC 2	Inorganic	100	11	-10 to +120	2		
CASSIDA FM GREASE DC 2 SPRAY	Inorganic	100	11	-10 to +120	00*		
White mineral oil grease, multipurpose, suitable for both direct and incidental food contact applications. Can handle a wide range of applications.	<b>Main application:</b> For use as a direct food contact release agent for grills, loaf pans, cutters, boning benches, chopping blocks and other hard surfaces to help prevent food from adhering during processing. Lubrication and protection of seals, guides, bearings and blades operating in food, pharmaceutical and other clean environments where direct food contact is inevitable.						

\*without propellant

### **CASSIDA FM GREASE EP 1.5**

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*	
CASSIDA FM GREASE EP 1.5	AlCx mod.	200	22	-20 to +130 (upper peak: +140)	1.5		
Modified aluminium complex multipurpose, extreme pressure grease.	<b>Main application:</b> For use on slow to medium Speed plain and rolling element bearings in regular or heavy loaded applications. Recommended for use in machinery requiring frequent changes of the grease charge or with a high product consumption rate, such as machines used to process pet food and animal feed.						

### **GREASES**

### CASSIDA FM GREASE HD 1.5 | 2

	Thickener	Viscosity at 40°C [mm²/s]	Viscosity at 100°C [mm²/s]	Temperature range [°C]	NLGI- Grade	Color Code*	
CASSIDA FM GREASE HD 1.5	AlCx mod.	550	38	-10 to +140 (upper peak: +150)	1.5		
CASSIDA FM GREASE HD 2	AlCx mod.	550	38	-10 to +140 (upper peak: +150)	2		
Modified aluminium complex heavy-duty, extreme- pressure greases.	<b>Main application:</b> For use on slow to medium-speed plain and rolling element bearings in heavy-loaded and shock-loaded applications. Recommended for use in machinery requiring frequent changes of the grease charge or with a high product consumption rate, such as machines used to process pet food and animal feed.						

### **Application Equipment**

### **GREASE GUN**

### **HD GREASE GUN CASSIDA**

The two-handed gun guarantees clean and safe lubrication of machines in the food industry. It delivers a large volume of lubricant per stroke. Particularly simple handling is achieved with the use of matching cartridges with a screw cap.

The gun is pre-lubricated with food grade grease, which ensures the highest level of food safety.

- Operation pressure up to 400 bar / 5,800 psi
- Ergonomic grips for optimum operation
- Twin-lock system protects the piston from wear and avoids grease escaping the piston
- Protecting cap to prevent contamination at hose end
- Flexible armoured hose for optimum accessibility of lubricating points
- Output: 1.5 cm³/stroke
- Available with 500 g SR cartridges
- Complete discharge of the SR cartridge by special piston shape
- Colour coding of cartridges avoids mixing up different lubricants



The information contained in this product information is based on the experience and know-how of FUCHS LUBRICANTS GERMANY in the development and manufacturing of lubricants and represents the current state of the art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pretreatment, possible external contamination, etc. For this reason, universally valid statements about the function of our products are not possible. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

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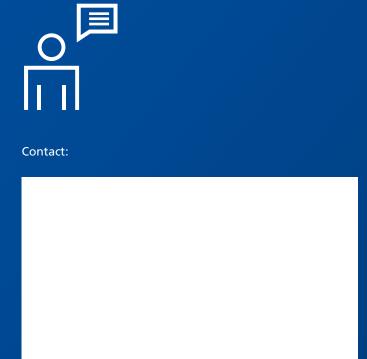
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# Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



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