



کیمائیل  
CHEMAOIL

**HIGH PERFORMANCE  
FOOD GRADE LUBRICANTS & GREASES**  
*Technical Guide*



*INDUSTRY*

*TO SUPPORT*

*THE INDUSTRY*



## HIGH PERFORMANCE FOOD GRADE LUBRICANTS & GREASES

Manufactured by National Oil & Chemical Co. Ltd, Saudi Arabia

*NSF H1 registered.*

*CHEMAOIL lubricants, greases and white oils.*

*Conforming to international standards*

### Now available for following industries

- ✦ Food processing
- ✦ Edible oil manufacturing and processing
- ✦ Confectionary
- ✦ Fruits & vegetables processing
- ✦ Sugar
- ✦ Dairy & dairy products
- ✦ Bakery
- ✦ Meat processing & packing
- ✦ Beverages
- ✦ Cosmetics
- ✦ Pharmaceuticals; (Finished dosage forms & Active ingredients)
- ✦ Animal feed
- ✦ Tobacco, etc

H1 lubricants are food grade lubricants used in food, beverages & pharmaceuticals industries. Though the machines are designed such a way that there is no direct contact with lubricants, anyhow incidental contact with lubricants cannot be ruled out and thus jeopardizing safety of the food products & medicines. This may endanger the health of consumers, leading to significant loss of reputation. Also a product recalled cannot be ruled out.

CHEMAOIL H1 lubricants offer food safety during the entire production process. These products are designed to meet / exceed desired performance level.

### PIONEERING SAFETY IN FOOD & ALLIED INDUSTRIES IN THE REGION



# CHEMAOIL'S H1 FOOD GRADE LUBRICANTS, GREASES & WHITE OILS RANGE

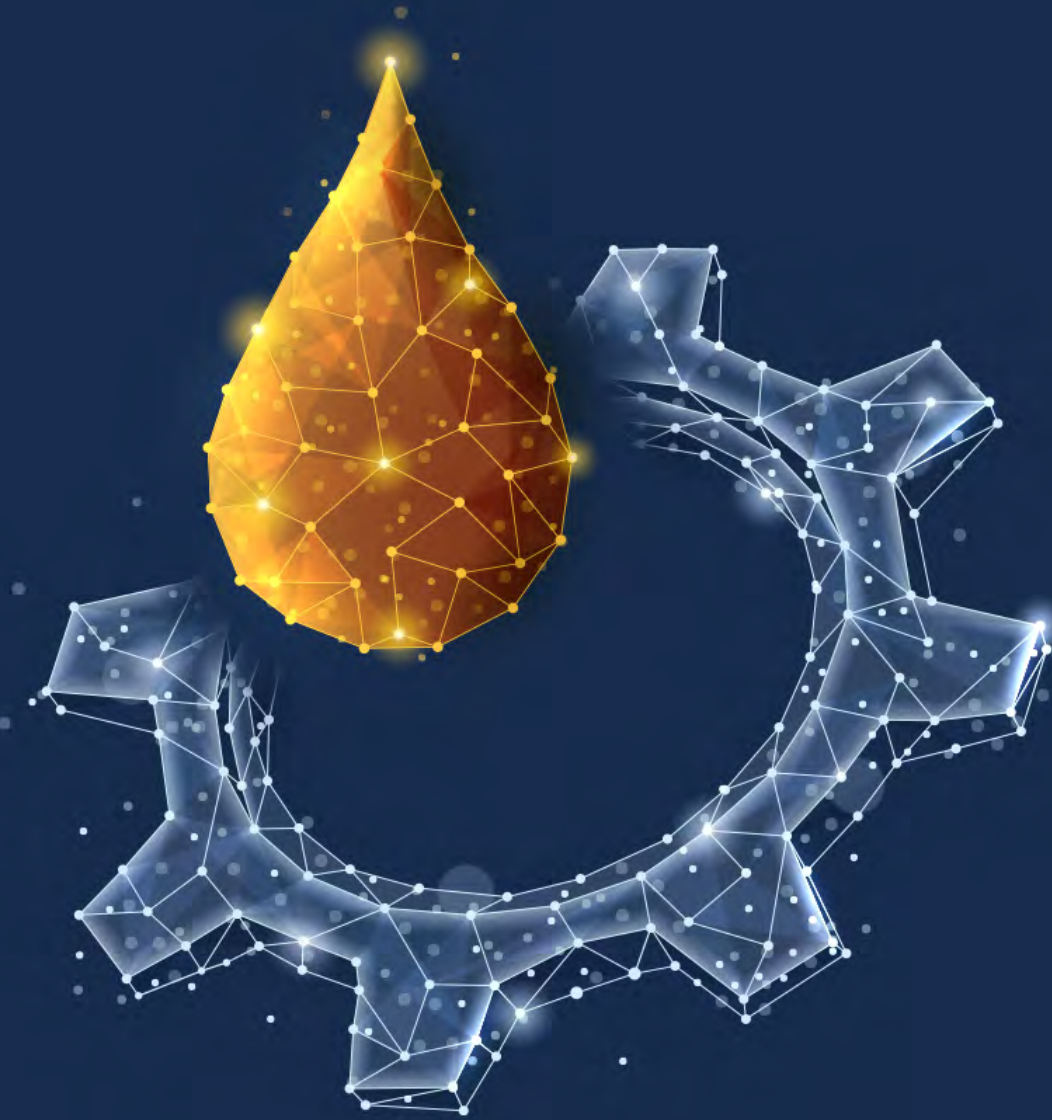


## APPLICATION GUIDE

PRODUCT	H1 NSF REG. NO.	BASE	APPLICATIONS
<b>CHAIN LUBRICANTION</b>			
CHEMAOIL FG Chain oil 46	160482	White oils	All types of drive chains, tablet press, sprockets, Fillers & cappers, Gen. equipment
CHEMAOIL FG Chain oil 100	160483		
CHEMAOIL FG Chain oil HT	160484	Synthetic esters	High & very low temperature chains & drive applications, chiller room
<b>GEAR LUBRICATION</b>			
CHEMAOIL FG Gear oil 220	160485	White oils	All types of gear boxes, agitators, mixers etc
CHEMAOIL FG Gear oil 320	160486		
CHEMAOIL FG Gear oil 460	160487		
<b>HYDRAULIC OILS</b>			
CHEMAOIL FG Hydraulic oil 32	160488	White oils	Hydraulic systems, low temperature gear lubrication
CHEMAOIL FG Hydraulic oil 46	160489		
CHEMAOIL FG Hydraulic oil 68	160490		
<b>COMPRESSOR OILS</b>			
CHEMAOIL FG Compressor oil 32	160496	White oils	All types of Compressors, vacuum pumps
CHEMAOIL FG Compressor oil 46	160497		
CHEMAOIL FG Compressor oil 68	160498		
<b>MAINTENANCE &amp; GENERAL-PURPOSE LUBRICATION</b>			
CHEMAOIL FG GP lubricant 32	160511	White oils	All types of food & pharma machines, hinges, conveyors etc
CHEMAOIL FG GP lubricant 46	160512		
CHEMAOIL FG GP lubricant 68	160513		
<b>SYNTHETIC LUBRICANTS</b>			
CHEMAOIL FG Synlube HC 32	160491	Poly alpha olefin	High & very low temperature hydraulic gears & gear applications, general purpose
CHEMAOIL FG Synlube HC 46	160494		
CHEMAOIL FG Synlube HC 68	160495		
<b>GREASES</b>			
CHEMAOIL FG grease 000	160515	White oils	Bearings, rollers, bushes, hinges etc. Also, for centralized lube system.
CHEMAOIL FG Grease 2		White oils	
CHEMAOIL FG Syn-Grease 00		Poly alpha olefins	Bearings, rollers, bushes, slides, hinges and general lubrication points.
CHEMAOIL FG Syn-Grease 2			
<b>WHITE OILS</b>			
CHEMAOIL WO 15	159622	Hydro-treated	Anti-dusting agents for grains & animal feed, Protective coatings for fruits & vegetables,
CHEMAOIL WO 25	159623		
CHEMAOIL WO 60	159624	Mineral base stock	Non-stick release agent in meat and poultry plants, Process oils or diluents in adhesives, sealants, caulk, cosmetics, pharmaceuticals, Rubber extender oils and plastics
CHEMAOIL WO 80	159625		



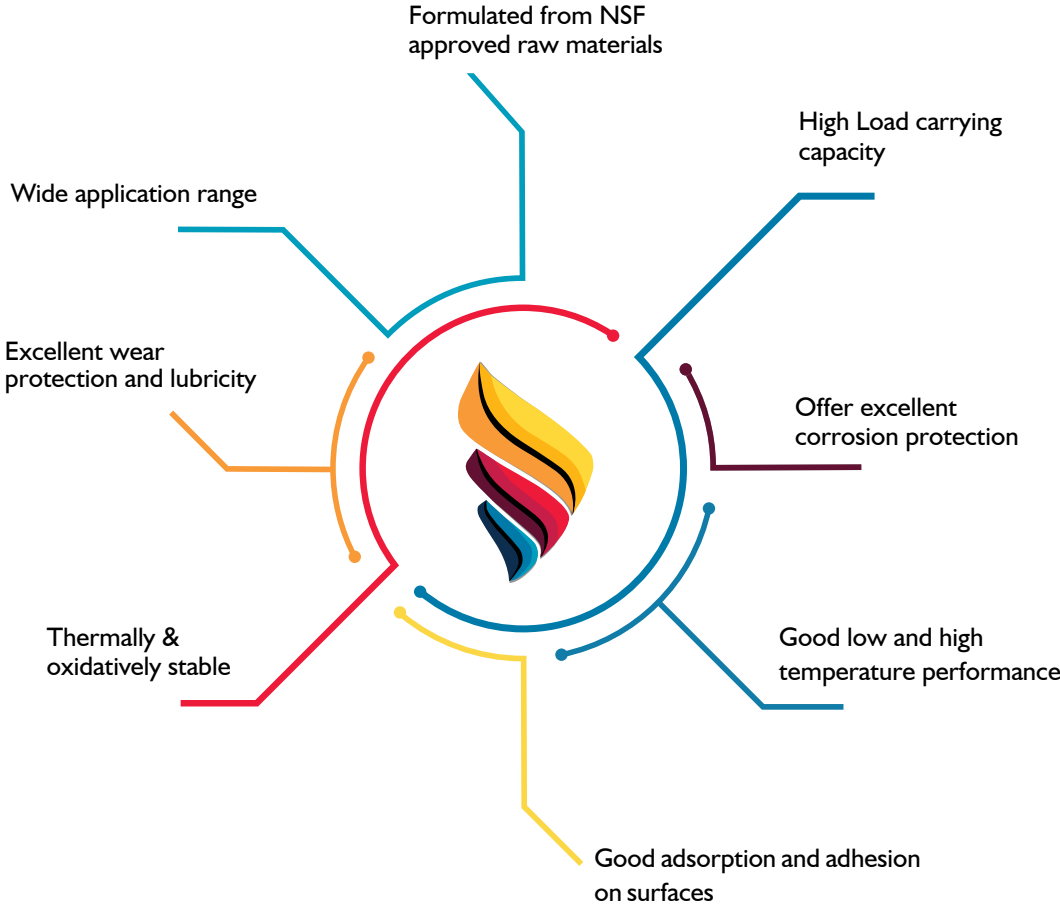




## **ABOUT NATIONAL & CHEMICAL COMPANY LTD**

National Oil & Chemical Company is a part of INKAN Holding Company which is into diverse business activities. It is a reputed supplier for quality oils like Transformer oils, Technical white oils, Polymer & Rubber process oils, Food & Agriculture grade white oils, Aerosol oils and specialty functional fluids. It has state of art manufacturing facilities, well-equipped QA / QC facilities, R & D capabilities for product & process innovations and experienced & technically well qualified management. We are a customer focussed, technology driven & environmental cautious company and we are striving to become a global reputed player.

# CHEMAOIL FOOD GRADE LUBRICANTS & GREASES.



## CHEMAOIL FOOD GRADE CHAIN OILS (WHITE OIL BASED)



CHEMAOIL FOOD GRADE CHAIN OILS are pharmaceutical white oil based, high performance food grade chain lubricants, with anti-wear and EP additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



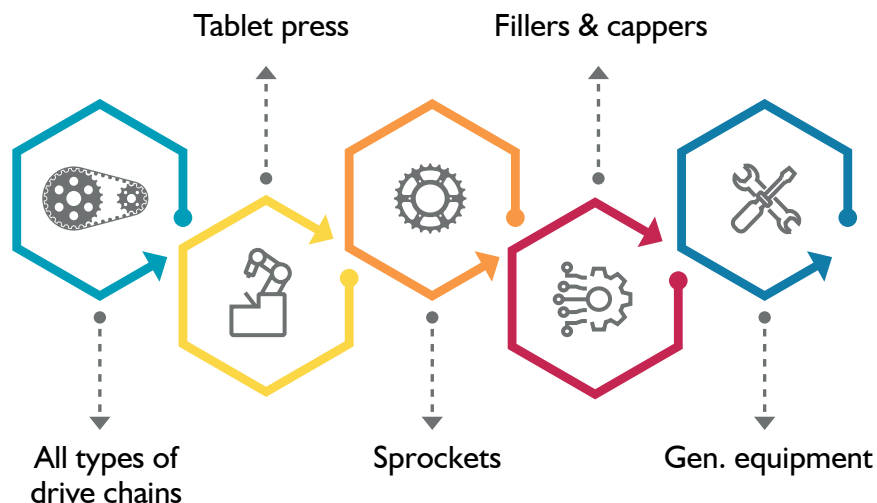
### WHY USE CHEMAOIL FOOD GRADE CHAIN OILS



- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Elongates chain life
- 3 Excellent wear protection
- 4 Provides corrosion protection
- 5 Excellent water resistance



## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Chain oils	
		Grade 46	Grade 100
Appearance	Visual	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	46 cSt	100 cSt
Viscosity index	ASTM D 2270	104	106
Flash Point, COC	ASTM D 92	180 °C	260 °C
Pour Point	ASTM D 97	-14 °C	-9 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	IA	IA
4 Ball Weld Load	ASTM D 2783	155 Kg	160 Kg
Operational temperature range		-8 to 140 °C	0 to 160 °C
Shelf Life in ideal conditions		3 years	3 years



## CHEMAOIL FOOD GRADE CHAIN OIL- HT



CHEMAOIL FOOD GRADE CHAIN OIL HT is a synthetic ester based, high performance food grade chain lubricant, with anti-wear and EP additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.

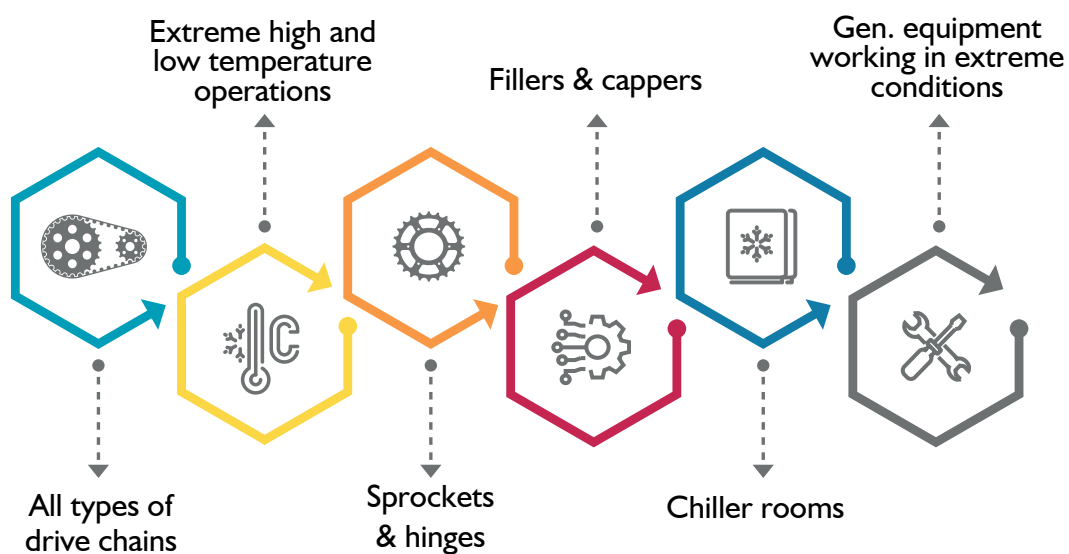


### WHY USE CHEMAOIL FOOD GRADE CHAIN OIL-HT



- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Very effective for high temperature and high load operations
- 3 Excellent wear protection
- 4 Provides corrosion protection
- 5 Enhanced wetting
- 6 Excellent water resistance
- 7 No carbon deposit formation

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Chain oil HT
Appearance	Visual	Clear liquid
Viscosity @ 40 °C	ASTM D 445	214 cSt
Viscosity index	ASTM D 2270	155
Flash Point, COC	ASTM D 92	255 °C
Pour Point	ASTM D 97	-32 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A
4 Ball Weld Load	ASTM D 2783	180 Kg
Operational temperature range		-20 °C to 240 °C
Shelf Life in ideal conditions		3 years



## CHEMAOIL FOOD GRADE GEAR OILS (WHITE OIL BASED)



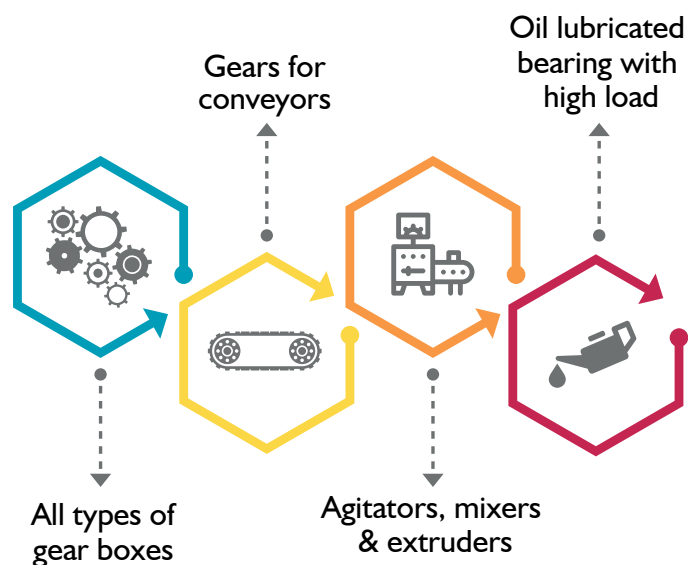
CHEMAOIL FOOD GRADE GEAR OILS are pharmaceutical white oil based, high performance food grade gear oils, formulated with latest gear oil additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



### WHY USE CHEMAOIL FOOD GRADE GEAR OILS

- 1** H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2** Very good extreme pressure properties & Excellent wear protection
- 3** Provides corrosion protection
- 4** Excellent water resistance
- 5** Oxidation inhibited
- 6** Increases life of gears and bearings

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Gear oils		
		Grade 220	Grade 320	Grade 460
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	220 cSt	320 cSt	460 cSt
Viscosity index	ASTM D 2270	105	107	105
Flash Point, COC	ASTM D 92	250 °C	255 °C	262 °C
Pour Point	ASTM D 97	-12 °C	-12 °C	-9 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A	1A	1A
Demulsibility, in minutes	ASTM D 1401	9	12	15
FZG Load, A/8,3/90 (FLS)	DIN 51354-2	13	13	13
Operational temperature range		-5 °C to 140 °C	-5 °C to 140 °C	-5 °C to 140 °C
Shelf Life in ideal conditions		3 years	3 years	3 years





## CHEMAOIL FOOD GRADE HYDRAULIC OILS (WHITE OIL BASED)



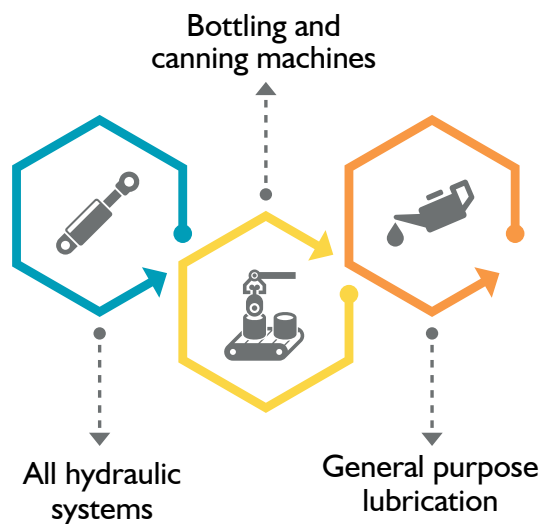
CHEMAOIL FOOD GRADE HYDRAULIC OILS are pharmaceutical white oil based, high performance food grade hydraulic oils, with anti-wear and EP additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



### WHY USE CHEMAOIL FOOD GRADE HYDRAULIC OILS

- 1** H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2** Suitable for all types of hydraulic systems
- 3** Excellent water resistant
- 4** Good air release properties
- 5** Corrosion and oxidation inhibited

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Hydraulic oils		
		Grade 32	Grade 46	Grade 68
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	32 cSt	46 cSt	68 cSt
Viscosity index	ASTM D 2270	105	106	106
Flash Point, COC	ASTM D 92	220 °C	240 °C	260 °C
Pour Point	ASTM D 97	-14 °C	-12 °C	-9 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A	1A	1A
Demulsibility, in minutes	ASTM D 1401	8	9	15
FZG Scuffing, A/8,3/90 (FLS)	DIN 51534-2	12	12	12
Operational temperature range		-5 °C to 140 °C	-5 °C to 140 °C	-5 °C to 140 °C
Shelf Life in ideal conditions		3 years	3 years	3 years



## CHEMAOIL FOOD GRADE COMPRESSOR OILS (WHITE OIL BASED)



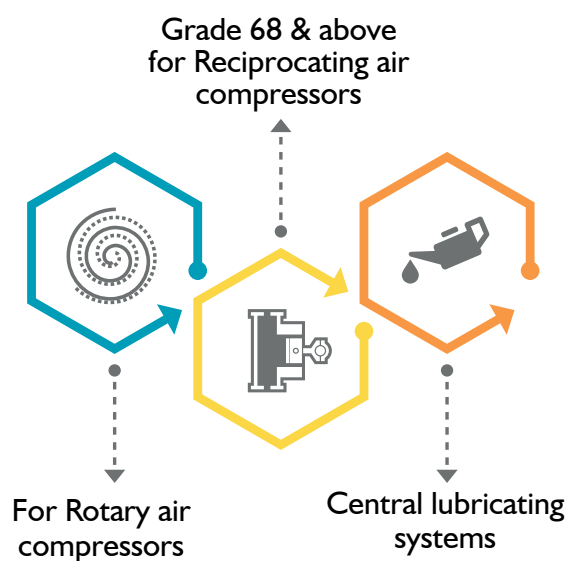
CHEMAOIL FOOD GRADE COMPRESSOR OILS are pharmaceutical grade white oil based, high performance food grade compressor oils, formulated with latest additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



### WHY USE CHEMAOIL FOOD GRADE COMPRESSOR OILS

- 1** H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2** Improve efficiency
- 3** Provide corrosion protection
- 4** Ageing stability
- 5** Low coking tendency

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL Compressor oils		
		Grade 32	Grade 46	Grade 68
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	30-34 cSt	44-48 cSt	66-70 cSt
Viscosity index	ASTM D 2270	104	106	107
Flash Point, COC	ASTM D 92	220 °C	240 °C	260 °C
Pour Point	ASTM D 97	-14 °C	-12 °C	-9 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A	1A	1A
Demulsibility, in minutes	ASTM D 1401	8	9	15
<b>Operational temperature range</b>				
		-5 °C to 140 °C	-5 °C to 140 °C	-5 °C to 140 °C
<b>Shelf Life in ideal conditions</b>				
		3 years	3 years	3 years





## CHEMAOIL FOOD GRADE MAINTENANCE OILS (WHITE OIL BASED)



CHEMAOIL FOOD GRADE MAINTENANCE AND GENERAL PURPOSE LUBRICANT OILS are pharmaceutical white oil based, high performance food grade maintenance oils, with anti-wear and EP additives registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.

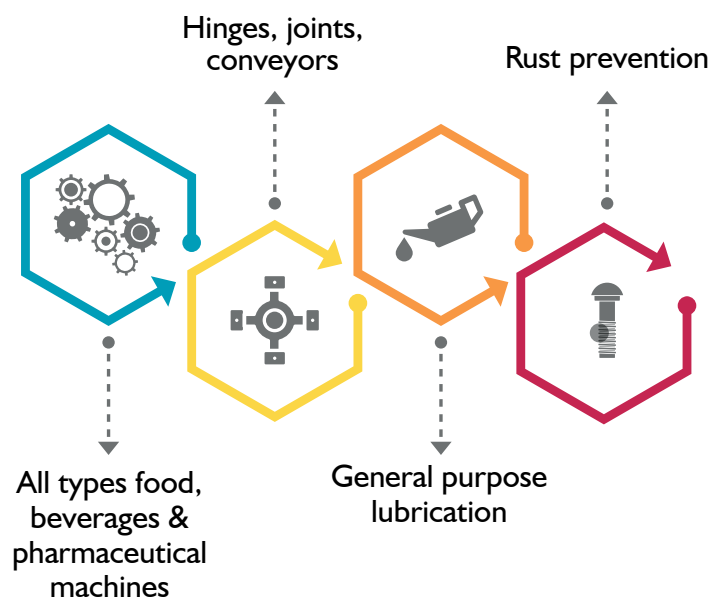


### WHY USE CHEMAOIL FOOD GRADE MAINTENANCE OILS

- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Suitable for all types of general lubrication
- 3 Suitable for all types of maintenances
- 4 Good anti wear properties
- 5 Excellent anti rusting properties
- 6 Excellent water resistant
- 7 Corrosion and oxidation inhibited



## APPLICATIONS

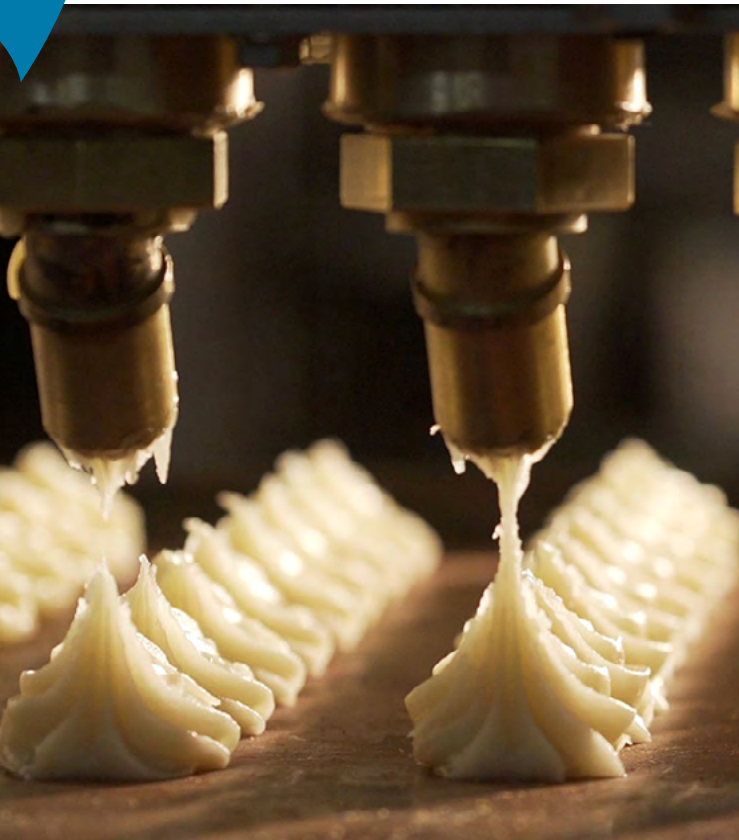


## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Maintenance oils		
		Grade 32	Grade 46	Grade 68
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	32 cSt	46 cSt	68 cSt
Viscosity index	ASTM D 2270	105	106	106
Flash Point, COC	ASTM D 92	220 °C	240 °C	260 °C
Pour Point	ASTM D 97	-14 °C	-12 °C	-9 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A	1A	1A
Demulsibility, in minutes	ASTM D 1401	8	9	15
FZG Scuffing, A/8,3/90 (FLS)	DIN 51354-2	12	12	12
Operational temperature range		-5 °C to 140 °C	-5 °C to 140 °C	-5 °C to 140 °C
Shelf Life in ideal conditions		3 years	3 years	3 years



## CHEMAOIL FOOD GRADE HC SERIES SYNTHETIC OILS



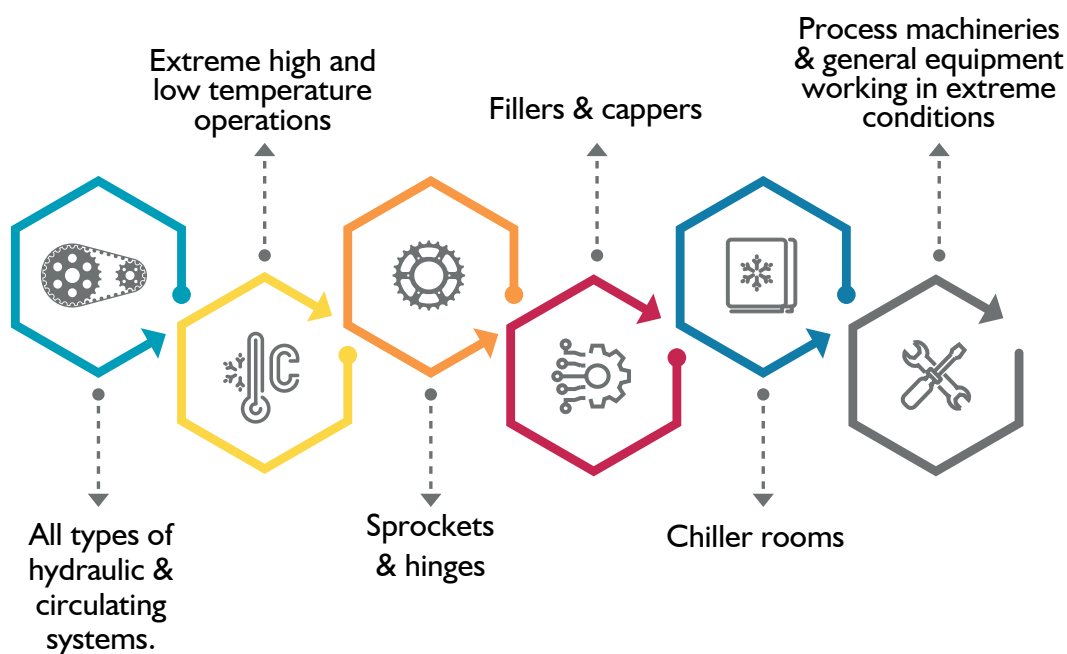
CHEMAOIL FOOD GRADE HC SERIES SYNTHETIC OILS are poly alpha olefins based, high performance food grade synthetic oils for hydraulic and circulating systems, with excellent oxidation stability, high resistance to wear, and excellent load carrying properties, registered to H1 for incidental food contact for use in food, dairy, beverage, cosmetic and pharmaceutical industries.



## WHY USE CHEMAOIL FOOD GRADE SYNLUBE OILS

- 1** H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2** Very effective for extreme temperature conditions and high load operations
- 3** Excellent wear protection
- 4** Provides corrosion protection
- 5** Excellent water resistance
- 6** No carbon deposit formation

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG HC Series Synlubes		
		Grade HC 32	Grade HC 46	Grade HC 68
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid
Viscosity @ 40 °C	ASTM D 445	32 cSt	46 cSt	68 cSt
Viscosity index	ASTM D 2270	140	150	152
Flash Point, COC	ASTM D 92	242 °C	258 °C	260 °C
Pour Point	ASTM D 97	-48 °C	-45 °C	-45 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1A	1A	1A
Demulsibility, in minutes	ASTM D 1401	8	9	9
4 Ball Wear scar, mm diameter	ASTM D 4172	0.41	0.36	0.35
Operational temperature range		-35 °C to 165 °C	-35 °C to 165 °C	-35 °C to 165 °C
Shelf Life in ideal conditions		3 years	3 years	3 years



## CHEMAOIL FOOD GRADE GREASE 000



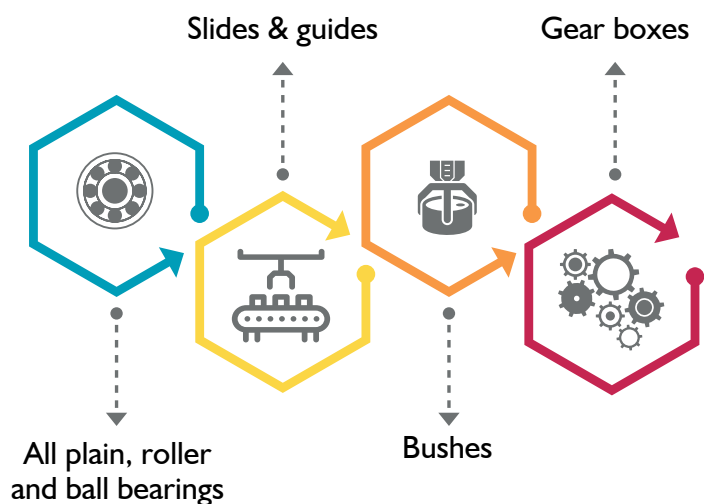
CHEMAOIL FOOD GRADE GREASE 000 is a pharmaceutical white oil based, food grade general purpose soft grease registered to H1 for incidental food contact, aluminium complex thickened, for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



### WHY USE CHEMAOIL FOOD GRADE GREASE 000

- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Heavy duty NLGI 000 greases applications
- 3 Excellent extreme pressure properties
- 4 Good load carrying properties
- 5 Excellent wear protection
- 6 Provides corrosion protection
- 7 Excellent water resistance
- 8 No carbon deposit formation
- 9 Also suitable for centralised lubrication systems

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Grease-000
Appearance	Visual	Semi fluid white
NLGI Grade	ASTM D 217	NLGI 000
Viscosity of Base oil @ 40 °C	ASTM D 445	180 cSt
Viscosity index	ASTM D 2270	155 °C
Dropping Point	ASTM D 2265	205 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1B
4 Ball Wear Load Scar diameter	ASTM D 2266	0.5 mm
Operational temperature range		-20 °C to 110 °C
Shelf Life in ideal conditions		3 years





## CHEMAOIL FOOD GRADE GREASE 2



CHEMAOIL FOOD GRADE GREASE 2 is a pharmaceutical white oil based, food grade general purpose soft grease registered to H1 for incidental food contact, aluminium complex thickened, for use in food & allied industries, dairy, meat processing, beverages, cosmetics and pharmaceutical processing and production areas.

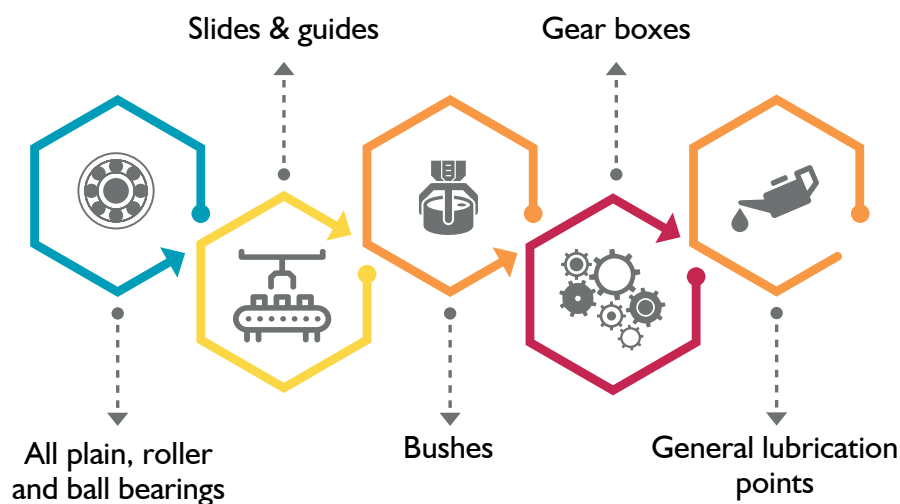


### WHY USE CHEMAOIL FOOD GRADE GREASE 2



- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Heavy duty NLGI 2 greases applications
- 3 Excellent extreme pressure properties
- 4 Good load carrying properties
- 5 Excellent wear protection
- 6 Provides corrosion protection
- 7 Excellent water resistance
- 8 No carbon deposit formation

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG grease 2
Appearance	Visual	Smooth translucent
NLGI Grade	ASTM D 217	NLGI 2
Viscosity of Base oil @ 40 °C	ASTM D 445	180 cSt
Viscosity index	ASTM D 2270	155 °C
Dropping Point	ASTM D 2265	>275 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1B minimum
4 Ball Wear Load Scar diameter	ASTM D 2266	0.5 mm
Operational temperature range		-15 °C to 120 °C
Shelf Life in ideal conditions		3 years



## CHEMAOIL FOOD GRADE SYN GREASE 00



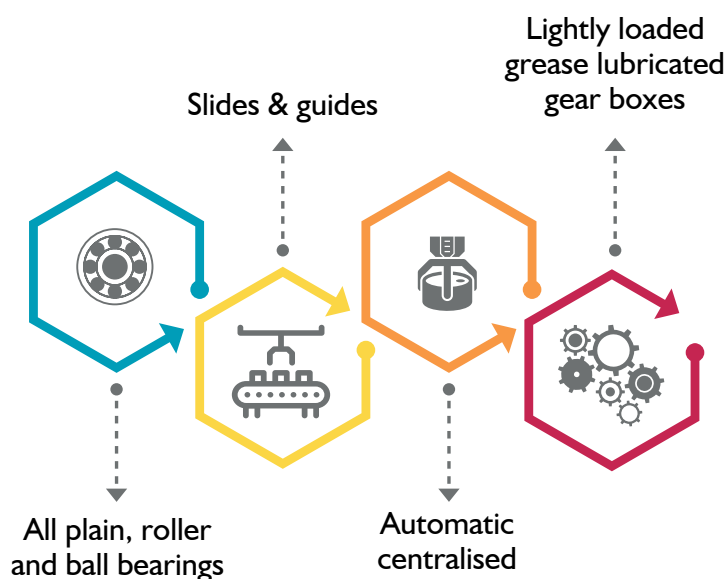
CHEMAOIL FOOD GRADE SYN GREASE 00 is a poly alpha olefins based, manufactured using selected high performance additives. This is a food grade general purpose soft aluminium complex thickened grease registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



### WHY USE CHEMAOIL FOOD GRADE SYN GREASE 00

- 1 HI Registered, so absolutely safe to use where incidental food contact may occur
- 2 Designed for NLGI 00 greases applications
- 3 Excellent extreme pressure properties
- 4 Good load carrying properties
- 5 Excellent wear protection
- 6 Provides corrosion protection
- 7 Excellent water resistance
- 8 Good adhesive properties
- 9 Suitable for centralised lubrication systems
- 10 Mechanically stable
- 11 Compatible with the elastomers, gaskets, seals and paints normally used in food machinery lubrication systems

## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Syn grease 00
Appearance	Visual	Semi fluid white
NLGI Grade	ASTM D 217	NLGI 000
Viscosity of Base oil @ 40 °C	ASTM D 445	100 cSt
Dropping Point, Min	ASTM D 2265	200 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1B
4 Ball Wear Load Scar diameter	ASTM D 2266	0.5 mm
Operational temperature range		-20 °C to 110 °C
Shelf Life in ideal conditions		3 years





## CHEMAOIL FOOD GRADE SYN GREASE 2



CHEMAOIL FOOD GRADE SYN GREASE2 is a poly alpha olefins based, manufactured using selected high performance additives. This is a food grade general purpose aluminium complex thickened grease registered to H1 for incidental food contact for use in food & allied industries, dairy, beverages, cosmetics and pharmaceutical processing and production areas.



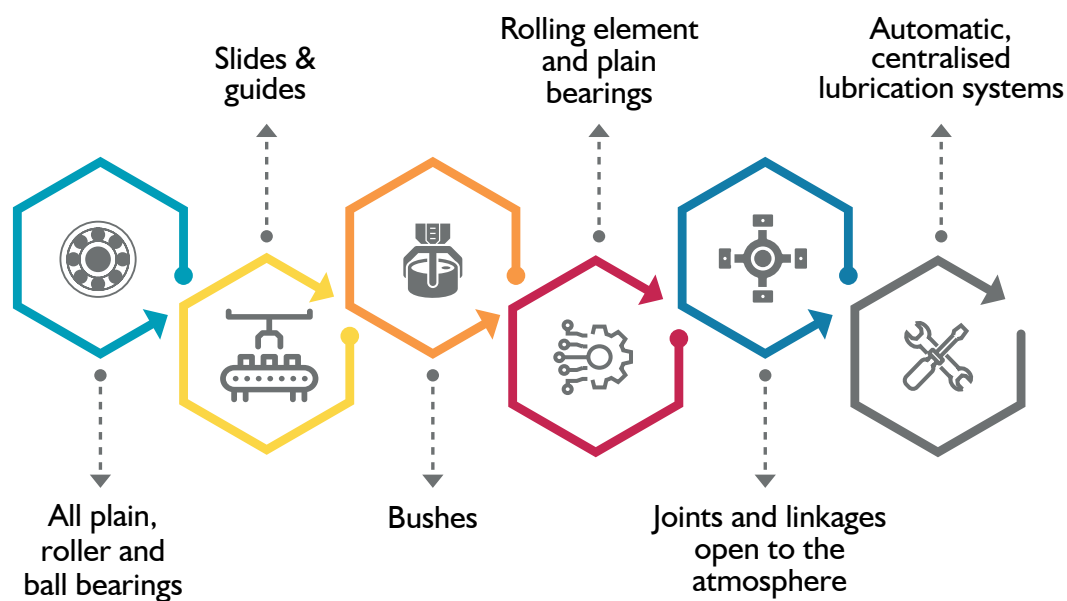
### WHY USE CHEMAOIL FOOD GRADE SYN GREASE 2



- 1 H1 Registered, so absolutely safe to use where incidental food contact may occur
- 2 Designed for NLGI 2 greases applications
- 3 Excellent extreme pressure properties
- 4 Good load carrying properties
- 5 Excellent wear protection
- 6 Provides corrosion protection
- 7 Excellent water resistance
- 8 Good adhesive properties
- 9 High drop point
- 10 Mechanically stable
- 11 Compatible with the elastomers, gaskets, seals and paints normally used in food machinery lubrication systems



## APPLICATIONS



## TYPICAL TECHNICAL CHARACTERISTICS

Property	Test Method	CHEMAOIL FG Syn grease 2
Appearance	Visual	Smooth translucent
NLGI Grade	ASTM D 217	NLGI 2
Viscosity of Base oil @ 40 °C	ASTM D 445	150 cSt
Viscosity index	ASTM D 2270	155 °C
Dropping Point	ASTM D 2265	>275 °C
Copper Strip Corrosion, 3h, 100 °C	ASTM D 130	1B minimum
4 Ball Wear Load Scar diameter	ASTM D 2266	0.5 mm
Operational temperature range		-15 °C to 120 °C
Shelf Life in ideal conditions		3 years





National Oil & Chemical Company  
*Part of INKAN Holding Co.*

Saudi Arabia, P.O. Box 24002,  
Al Hasa Industrial City 31982

Tel. +966 13 5330113

Fax. +966 13 5330041

[sales@chemaoil.com.sa](mailto:sales@chemaoil.com.sa)

[www.chemaoil.com.sa](http://www.chemaoil.com.sa)



[www.chemaoil.com.sa](http://www.chemaoil.com.sa)

INDUSTRY ..

TO SUPPORT THE INDUSTRY