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FRICK COMPRESSOR OILS

YORK Refrigeration Systems has manufactured refrigeration compressors for all types of applications and refrigerants since 1882. Continuous research backed by years of experience has resulted in Frick oils that meet the demands of all refrigeration and gas compression applications. We offer a wide range of oils that address your specific compressor lubrication and budget requirements. Our rigid specifications ensure that all Frick oils are produced to the highest quality standards for premium performance and durability.

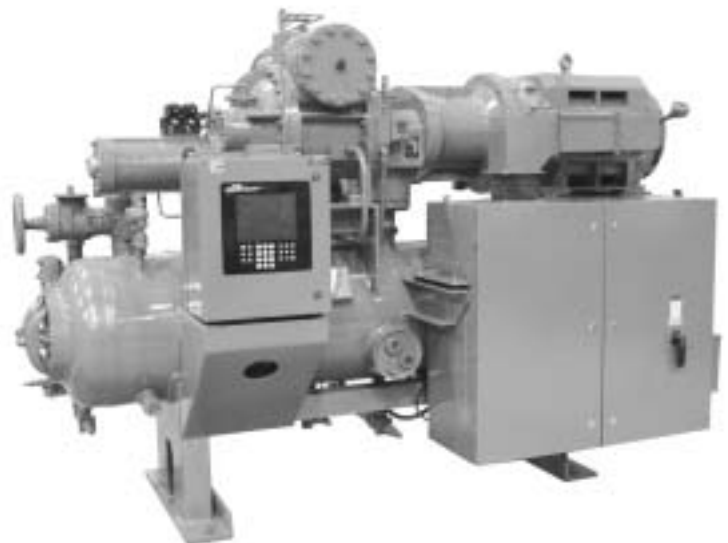
Frick compressor oils deliver:

- Highest quality ensuring lubricity at designed operating temperatures and pressures.
- Chemically stable at designed operating conditions.
- Resistant to high temperature breakdown.
- High flash points.
- Low moisture content.
- Low pour points to resist congealing in condensers and evaporators.
- Exceptionally wax free.
- Formulated to proper viscosities for specific applications.

YORK Refrigeration Systems offers superior performance lubricants to match your application. Synthetic oils offer superior breakdown characteristics, better lubricity, extended viscosities, and reduced oil change intervals.

By maintaining these high standards of quality and product excellence, Frick oils have won approval of the entire refrigeration industry. Since few end users have the resources to analyze the contents of oil and test their durability, it is good engineering practice to use oil which is backed by the experience of the leading refrigeration equipment manufacturer. It only proves.....

You Can't Beat the System When It's All Frick.



AMMONIA OILS

- #3** Premium quality medium/heavy weight hydrogenated mineral based oil for ammonia refrigerant. Frick #3 oil has proven its versatility in thousands of reciprocating and screw compressor applications worldwide over the past 30 years. #3 oil is specially formulated with base oil and additives to meet Frick's specifications. #3 oil offers greater thermal stability than naphthenic products and better lubricity and viscosity in ammonia applications. #3 oil is a cost-effective alternative to most ammonia refrigerant applications. Recommended evaporator temperatures are -50°F and above.
- #4** Premium quality, heavyweight, mineral base, hydrogenated oil for ammonia applications. Frick #4 oil is formulated with additives to meet Frick specifications. #4 oil is especially well suited for large, low speed reciprocating compressors.
- #9** Superior semisynthetic hydro-treated oil designed for ammonia applications. Frick #9 oil provides high thermal stability for improved breakdown characteristics and extended service intervals. #9 oil is less volatile and less soluble in ammonia resulting in decreased oil foaming for better compressor lubrication and lower oil carryover from the oil separator. This oil's higher viscosity results in less bearing wear than pure mineral based naphthenic oils. Recommended evaporator temperatures are -50°F and above. Frick#9 is registered as a lubricant where there is no possibility of food contact (H2) in and around food processing areas.
- #9ST** Similar to Frick #9 but with additional seal treating properties. Frick #9ST is specially blended to condition O-Rings in ammonia systems changing from naphthenic oils to higher quality paraffinic oils. #9ST helps extend the life of elastomers and reduce leaks.
- #10** Superior quality oil for ammonia refrigeration systems utilizing direct expansion (DX) evaporators and rotary screw compressors. Frick #10 oil is an ammonia soluble oil which will mix with ammonia within the refrigeration system and return to the compressor via the system suction line. In addition to its solubility with ammonia, #10 oil offers superior lubricity and foaming characteristics when compared to PAG oils. Recommended for evaporator temperatures -20°F and above. Consult York Refrigeration Systems NA for application assistance before use in a new application.
- #11** This premium synthetic lubricant is custom blended with additives for oxidation inhibition, corrosion protection, defoaming, and antiwear. #11 oil is highly refined to be totally wax free with an extremely low pour point which makes it especially suited for ammonia, low temperature refrigeration applications. #11 oil does not require warming of the system low side for oil return above -80°F. #11 oil's high thermal stability resists breakdown and extends service intervals. Recommended for evaporator temperatures of -80°F and above. Frick #11 is registered as an (H1) lubricant suitable for incidental contact in and around food processing areas.
- #11ST** Similar to Frick #11 but with additional seal treating properties. Frick #11ST is a custom blended Polyalphaolefin synthetic hydrocarbon fluid. #11ST is blended to condition O-rings in ammonia systems transitioning from naphthenic oils to higher quality oils such as Frick #3, #9, #11. This product is also compatible with mineral oils and equipment designed for mineral oils. #11 helps extend the life of elastomers and reduce leaks.
- #19** A high quality custom blended Polyalphaolefin (PAO) synthetic hydrocarbon fluid which provides enhanced lubrication at both high and low temperatures, reduced volatility, chemical inertness, and compatibility with mineral oils.
- #20** A high quality blended hydrocarbon fluid. This product has good chemical inertness, hydrolytic stability, and compatibility with mineral oil and mineral oil equipment. Frick #20 offers an alternative to traditional synthetic lubricants for low temperature properties.

HALOCARBON OILS - R-22, etc.

#2A Premium quality, medium-weight, mineral-base oil for halocarbon refrigerants. Frick #2A oil is refined free of waxes that may congeal or precipitate at low evaporator temperatures. #2A oil has a naturally low pour point requiring no pour point depressants and a natural affinity to halocarbon refrigerants for good oil return and heat transfer. Frick #2A is recommended for evaporator temperatures -50°F and above. #2A oil offers the lowest, first cost alternative for halocarbon refrigerant applications.

#5 Premium quality, lightweight, mineral-base oil for halocarbon refrigerants. #5 oil has a low pour point and good miscibility characteristics for

improved oil return down to -50°F evaporator temperatures. Frick #5 oil viscosity may be too low for some compressor applications. Consult Frick for application assistance.

#6 & 7 High quality synthetic oil for low temperature application of halocarbon refrigerants. Frick #6 and #7 oils are the best choice for low evaporator temperatures due to their low pour points. These oils are recommended for evaporator temperatures of -70°F and above. Oil return is enhanced on low temperature systems due to the oils excellent miscibility with CFC and HCFC refrigerants. Consult Frick for application assistance.

HFC OILS

Superior quality ester-based synthetic lubricants especially suited for HFC refrigerants, R-134A, and the new refrigerant blends. Frick synthetic oils are custom blended with additives for oxidation inhibition, corrosion protection, defoaming, and antiwear. Synthetic oils have extremely low pour points. The low pour point makes it

specially suited for low temperature refrigeration applications. Frick synthetic oil's high thermal stability resists breakdown and extends service intervals. Consult Frick for application assistance.

#13 Superior quality ester-based synthetic oil. Frick #13 oil is recommended for R134a refrigerant.

HYDROCARBON and CO₂ OILS

YORK Refrigeration Systems also supplies additional Frick specialty oils for hydrocarbon and gas compression applications.

#12 Superior quality synthetic oil for hydrocarbon and gas compression application. Frick #12 oil is custom blended with additives for oxidation stability, corrosion protection, and lubricity. Additional advantages include the ability to withstand hydrocarbon dilution.

#12b Frick #12b is a superior blend of Polyalkylene glycols with additives for oxidation stability, corrosion protection, metal deactivation, and lubricity. The ability of this lubricant to withstand dilution by hydrocarbon and other compressed gas is advantageous to flooded screw compressors.

#14 Superior quality synthetic oil for CO₂ applications. Frick #14 oil gives improved lubrication at high and low temperatures, reduced volatility, and compatibility with mineral oils. Frick #14 is registered as a lubricant with incidental food contact (H1) for use in and around food processing areas.

#18 A custom blended Polyalphaolefin synthetic hydrocarbon fluid which provides enhanced lubrication at both high and low temperatures, reduced volatility, and compatibility with mineral oils and mineral oil equipment. Frick #18 contains both rust and oxidation inhibitors. Typical applications include landfill gas.

PROPERTIES							
OIL	VISCOSITY, cSt @ °C (°F)		VISCOSITY, SUS @100°F	POUR POINT °F MAX	FLASH POINT °F MAX	SERVICE TEMP. °F	DENSITY (lb/gal) @ 60°F
	@ 40 (104)	@ 100 (212)					
#2A	62	6.9	338	-35	370	300	7.5
#3	70	9.1	365	-22	465	350	7.2
#4	102.2	10.4	541	-25	514	350	7.3
#5	30.2	4.4	159	-50	350	300	7.4
#6	32-34	4.5	150	-35	310	300	7.3
#7	56	5.9	298	-31	355	300	7.2
#9	62.9	8.5	327	-38	440	350	7.4
#9ST	67	9.2	348	-36	465	350	7.5
#10	98.5	11.9	515	-26	456	350	8.3
#11	48	7.9	241	<-76	514	350	6.9
#11ST	45.3	7.5	233	-60	485	350	6.9
#12	153	23.5	785	-30	500	350	8.3
#12b	92.3	18.6	466	-40	500	350	8.3
#13	64	8.9	332	-45	511	350	8.0
#14	68.5	10.4	353	-60	519	350	7.0
#18	98.3	14.0	508	-60	480	350	7.0
#19	68.5	10.4	353	-60	480	350	7.0
#20	64.3	8.8	334	-49	465	350	7.0

OIL NUMBER	RECOMMENDED APPLICATIONS FOR FRICK REFRIGERANT OILS ⁽¹⁾		ORDERING INFORMATION				
	REFRIGERANT ⁽²⁾	SUCTION TEMPERATURE °F	ITEM NUMBERS				
			1 GALLON	5 GALLON	55 GALLON	330 GAL. TOTE ⁽³⁾	
#2A	HALOCARBONS	-50°+	—	111Q0550019	111Q0550020	333Q0001866	
#3	R-717	-50°+	333Q0001842	111Q0550001	111Q0550010	333Q0001861	
#4	R-717	-50°+	—	—	111Q0550005	—	
#5	HALOCARBONS	-50°+	—	—	111Q0550009	—	
#6	HALOCARBONS	-70°+	—	333Q0000940	333Q0000941	—	
#7	HALOCARBONS	-70°+	—	111Q0550024	111Q0550025	—	
#9	R-717	-50°+	—	333Q0000850	333Q0000849	333Q0001862	
#9ST	R-717	-50°+	—	333Q0001905	333Q0001904	—	
#10	R-717	-20°+	333Q0000741	333Q0000740	333Q0000739	—	
#11	R-717	-80°+	—	333Q0000852	333Q0000851	333Q0001863	
#11ST	R-717	-80°+	—	333Q0001907	333Q0001906	—	
#12	HYDROCARBONS	N/A	333Q0001140	333Q0001141	333Q0001142	—	
#12B	HYDROCARBONS	N/A	—	333Q0001883	333Q0001884	—	
#13	R134a	N/A	333Q0000511	333Q0001253	333Q0001254	—	
#14	CO ₂	N/A	333Q0001143	333Q0001144	333Q0001145	—	
#18	LANDFILL GAS	N/A	—	—	333Q0001892	—	
#19	R-717	N/A	—	333Q0001899	333Q0001900	—	
#20	R-717	N/A	—	333Q0001902	333Q0001903	—	
OIL ANALYSIS KIT - 333Q0001853			SHIPPING WEIGHT	8 lbs	40 lbs	466 lbs	2720+ lbs

- (1) For specific application questions, consult Frick.
- (2) For gases and refrigerants not listed, consult Frick.
- (3) Reusable Drain Valve for Tote - 333Q0001865.

COMPATIBILITY

Frick oils are compatible with the standard materials utilized in refrigeration systems. Changing from one type of oil to another on equipment which has operated in the field may cause shrinkage of elastomers and could cause leaks. Replacement of leaking elastomers is required if this occurs. Consult Frick for details.

MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets (MSDS) are available from Baltimore Parts Center, phone 800-336-7264.



DO NOT MIX OILS of different brands, manufacturers, or types. Mixing of oils may cause excessive oil foaming, nuisance oil level cutouts, oil pressure loss, gas or oil leakage and catastrophic compressor failure.



Use of oils other than Frick Oil in Frick compressors must be approved in writing by the engineering department at Frick or warranty claim may be denied.