



TUNAP | INDUSTRIAL MANUFACTURING



**SPECIAL LUBRICANTS
FOR THE FOOD INDUSTRY**



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TUNAP – WHO WE ARE

TUNAP is an innovation and technology leader in chemical products, especially for greases, oils, pastes and cleaners. Our core competencies lie mainly in consulting, in-house development and production. That is why we have been valued by our well-known industrial customers for over 40 years and continue to grow steadily.

As a manufacturer of chemical products, TUNAP is aware of its special responsibility. We are a member of the Bavarian Environmental Pact and are certified in accordance with ISO 9001 (quality management), ISO 14001 (eco-audit) and OHSAS 18001 (safety management).

The headquarters of TUNAP are located in Wolfratshausen. Other production sites, mainly for aerosols, are located in Lichtenau and Märstetten (CH). TUNAP has 19 subsidiaries in almost all European countries, as well as China and Brazil.



LUBRICANTS IN THE FOOD INDUSTRY

The safety of the lubricants used in the food and beverage industry is the prime objective of the lubricant development at TUNAP. As a result, we now offer a comprehensive range for virtually any application.

Which raw materials may be used for the production of lubricants for the food industry is regulated by a number of laws and regulations. An example is the USDA / FDA:

USDA / FDA:

The best-known regulation is from the USDA (United States Department of Agriculture) with the H1 and H2 identification, which is based on requirements from the FDA (Food and Drug Administration).

After their withdrawal at the end of the 90s, the NSF (National Sanitary Foundation: www.nsf.org) took over this function in the U.S. and has since established itself as the standard. However, the NSF does not limit its work to lubricants, but also regulates other non-food compounds such as cleaners (A1), metal care agents (A7), degreasers (A8), separating agents (3H, M1), heat transfer oils (HT1, HT2) and solvent-based cleaners (K1, K2, K3).



NSF H1:
Suitable for occasional, technically unavoidable contact with the food.

NSF H2:
Suitable for general use in the food industry, provided contact with food can be completely ruled out.



InS Services:
There is now also an institution in Europe that performs a listing or registration of food grade lubricants as specified by the USDA / FDA.

This is InS Services
(www.insservices.eu)



GREASES

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATUR [°C]
TUNGREASE H1/EP-SERIES Synthetic aluminum complex greases with EP additives in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Very good lubricating properties 	■ Lubrication of all types of components which are subjected to high loads and where there is a risk of direct contact between lubricant and food	Synthetic	2	265 – 295	> +250	-45 to +180
			Synthetic	00	400 – 430	> +250	-45 to +150

OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNGEAR H1-SERIES Physiologically safe, synthetic gear oils in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Protects against corrosion Reduces noise and vibrations 	■ For industrial gears where there is a risk of direct contact between lubricant and food	PAO / ester	0,86	46	-45	-40 to +140
					68	-48	-40 to +140
					100	-45	-40 to +140
					150	-45	-40 to +140
			PAO / ester	0,87	220	-42	-40 to +140
					320	-40	-40 to +140
TUNGEAR PG-SERIES Gear oils based on polyalkylene glycol and additives in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Low friction coefficient Resistant to high temperatures High viscosity index Neutral on most plastics 	■ For gears of all kinds, especially suitable for gears with high sliding friction, such as worm gears and for steel/ non-ferrous metal material combinations	Polyglycol	1,01	100	-35	-30 to +180
					150	-35	-30 to +180
					220	-30	-30 to +180
					320	-25	-30 to +180
					460	-20	-30 to +180

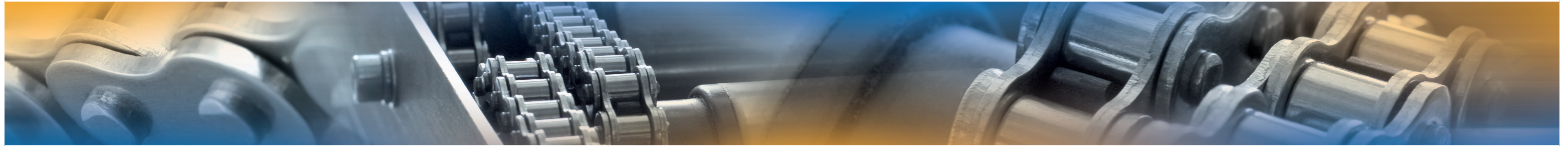


GREASES

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATUR [°C]
TUNGREASE 300 Chemically inert fluorocarbon grease with white solid substances	<ul style="list-style-type: none"> Very high load carrying capacity Resistant to high temperatures Protects against corrosion, frictional corrosion, seizing, coking and pittings Resistant to acids, solvents and alkalis Resistant to cold and hot water Clean use 	<ul style="list-style-type: none"> High-temperature use of antifriction, plain and ball bearings in an aggressive environment, suitable for oxygen fittings For use in the food and beverage industry where accidental contact with food is possible 	Synthetic	2	265 – 295	none	-30 to +250
TUNGREASE CS-2 Synthetic high-performance grease with a special complex soap and additives	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Excellent lubrication properties 	<ul style="list-style-type: none"> Lubrication of all types of components which are subjected to high temperatures, high pressures and/or high speeds Spindle and tapered roller bearings in machine tools Metal machining centers, textile machines, wire drawing machines, etc. 	Synthetic	2	265 – 295	> +280	-50 to +220
TUNGREASE CSH-2 Synthetic high-performance grease with a special complex soap and additives with higher base oil viscosity than CS-2	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Excellent lubrication properties 	<ul style="list-style-type: none"> Lubrication of all types of components which are subjected to high temperatures and high pressures 	Synthetic	2	265 – 295	> +280	-50 to +220
TUNGREASE H1-EP-2 Synthetic aluminum complex grease with EP additives	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Very good lubricating properties 	<ul style="list-style-type: none"> Lubrication of all types of components which are subjected to high loads and where there is a risk of direct contact between lubricant and food 	Synthetic	2	265 – 295	> +250	-45 to +180
TUNGREASE DAB White oil-containing multi-purpose grease with multi-functional additive combination	<ul style="list-style-type: none"> Long-term corrosion protection Good protection against oxidation and aging Physiologically safe Reduces friction and wear 	<ul style="list-style-type: none"> Lubrication and maintenance of seals, joints and moving parts where there is a risk of direct contact between lubricant and food 	Medical white oil	2	265 – 295	none	-20 to +120
TUNGREASE ST-3 Synthetic silicone adhesive grease with synergistically coordinated solid lubricants	<ul style="list-style-type: none"> Extremely adhesive to ceramic surfaces Resistant to cold and hot water Steam resistant up to +140 °C Neutral on most plastics UBA released in acc. with Lubricants Guideline 	<ul style="list-style-type: none"> Lubrication of all components in the fixture or service water industries Lubrication of plastic/plastic, plastic/metal, ceramic/ceramic, ceramic/metal material combinations 	Silicone oil	3	220 - 250	none	-30 to +180

OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNGEAR H1-SERIES Physiologically safe, synthetic gear oils in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Protects against corrosion Reduces noise and vibrations 	<ul style="list-style-type: none"> For industrial gears where there is a risk of direct contact between lubricant and food 	PAO / ester	0,87	220 320 460	-42 -40 -39	-35 to +140



GREASES

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATUR [°C]
TUNGREASE CS-2 Aerosol Synthetic high-performance grease	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Very good corrosion protection Very good creep properties Good adhesion 	■ For the lubrication of highly-loaded chains and conveyors in extreme environments	Fully synthetic	2	265 - 295	+280	-50 to +220

OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNFLUID TAC 2000 Physiologically safe, synthetic adhesive lubricant	<ul style="list-style-type: none"> Spin-resistant Very high adhesion strength Resistant to water Good creep properties Excellent corrosion protection Protects against wear Oil degradation and non-ferrous metal attack 	■ Lubrication and chains, ropes, open drives, levers, joints, rods, hinges, sliding surfaces and bearings where there is a risk of direct contact between lubricant and food	Fully synthetic	0.8 with solvent	2000	-7	-25 to +180
TUNFLUID DAB Physiologically safe paraffin oil	<ul style="list-style-type: none"> Reduces friction and wear Protects against corrosion Absolutely odorless and tasteless Cleans, maintains and protects 	■ Lubrication and maintenance of seals, joints, chains and all moving parts where there is a risk of direct contact between lubricant and food	Paraffin oil	0,86	68	-12	-20 to +80
TUNGEAR H1-SERIES Physiologically safe, synthetic gear oils in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Protects against corrosion Reduces noise and vibrations 	■ For industrial gears where there is a risk of direct contact between lubricant and food	PAO / ester	0,86	46	-45	-40 to +140
				0,86	68	-48	-40 to +140
				0,86	100	-45	-40 to +140
				0,86	150	-45	-40 to +140
				0,87	220	-42	-40 to +140
				0,87	320	-40	-40 to +140
				0,87	460	-39	-40 to +140



HYDRAULIC OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNFLUID LG-SERIES Hydraulic oils based on white oil with additives in various forms for different requirements	<ul style="list-style-type: none"> ■ High load carrying capacity ■ Reduces friction and wear ■ Reduces noise and vibrations ■ Protects against corrosion and aging 	■ Application in bakeries, bread factories, dairies, slaughterhouses, meat factories, farms, the beverage and packaging industries	Medical white oil	0,86	46	-11	-10 to +120
				0,87	68		

COMPRESSOR OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNAIR PAO-SERIES Physiologically safe, synthetic base oils with additives in various forms for different requirements	<ul style="list-style-type: none"> ■ Good oxidation and aging resistance ■ Good compatibility with elastomers, good corrosion protection ■ Reduces friction and wear ■ Reduces operating costs, long oil change intervals 	■ Lubrication of compressors and vacuum pumps of various designs	Synthetic	0,83	46	-50	-45 to +140
				0,83	68	-45	-45 to +140
				0,84	100	-45	-45 to +140



GREASES / PASTES

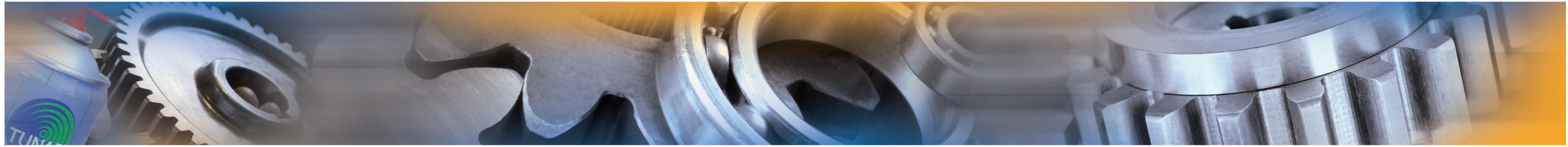
PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATUR [°C]
TUNGREASE CS-2 Synthetic high-performance grease with a special complex soap and additives	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Excellent lubrication properties 	<ul style="list-style-type: none"> For the lubrication of plain bearings under high temperature and stress conditions Can be delivered easily in central lubrication systems 	Synthetic	2	265 – 295	> +280	-50 to +220
TUNGREASE CSH-2 Synthetic high-performance grease with a special complex soap and additives with higher base oil viscosity than CS-2	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Excellent lubrication properties 	<ul style="list-style-type: none"> Lubrication of all types of components which are subjected to high temperatures and high pressures 	Synthetic	2	265 – 295	> +280	-45 to +220
TUNGREASE H1-EP-2 Synthetic aluminum complex grease with EP additives	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Low friction coefficient Very good corrosion protection Resistant to cold and hot water Very good lubricating properties 	<ul style="list-style-type: none"> For all types of plain bearings for mid- to high-level demands 	Synthetic	2	265 – 295	> +250	-45 to +180

OILS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	ISO VG ⁵ [mm ² /s]	POURPOINT ⁶ [°C]	OPERATING TEMPERATUR [°C]
TUNGEAR H1-SERIES Physiologically safe, synthetic gear oils in various forms for different requirements	<ul style="list-style-type: none"> High load carrying capacity Reduces friction and wear Protects against corrosion Reduces noise and vibrations 	<ul style="list-style-type: none"> For industrial gears where there is a risk of direct contact between lubricant and food 	PAO / ester	0,87	220	-42Ω	-40 to +140
					320	-40	-35 to +140

FITTINGS

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATUR [°C]
TUNGREASE ST-3 Synthetic silicone adhesive grease with synergistically coordinated solid lubricants	<ul style="list-style-type: none"> Extremely adhesive to ceramic surfaces Resistant to cold and hot water Steam resistant up to +140 °C Neutral on most plastics Physiologically safe UBA released in acc. with Lubricants Guideline 	<ul style="list-style-type: none"> Lubrication of all components in the fixture or service water industries Lubrication of plastic/plastic, plastic/metal, ceramic/ceramic, ceramic/metal material combinations 	Silicone oil	3	220 - 250	none	-30 to +180 °C +200 for short periods



CORROSION PROTECTION

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	COLOR	OPERATING TEMPERATURE [°C]	
TUNFLUID TAC 2000 Physiologically safe, synthetic adhesive lubricant	<ul style="list-style-type: none"> Very high adhesion strength / spin-resistant Resistant to water Good creep properties Excellent corrosion protection Protects against wear, oil degradation and non-ferrous metal attack 	<ul style="list-style-type: none"> Lubrication and chains, ropes, open drives, levers, joints, rods, hinges, sliding surfaces and bearings where there is a risk of direct contact between lubricant and food 	Fully synthetic	0.80 with solvent	Colorless	-20 to +180	
PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	CONSISTENCY CLASS ¹	WORKED PENETRATION ² [0,1mm]	DROPPING POINT ³ [°C]	OPERATING TEMPERATURE [°C]
TUNGREASE CS-2 Aerosol Synthetic high-performance grease	<ul style="list-style-type: none"> Very high load carrying capacity Reduces friction and wear Very good corrosion protection Very good creep properties Good adhesion 	<ul style="list-style-type: none"> For the lubrication of highly-loaded chains and conveyors in extreme environments For moving parts and tools 	Fully synthetic	2	265 – 295	+280	-50 to +220

MAINTENANCE

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	BASE OIL	DENSITY ⁴ (20 °C) [g/ml]	COLOR	FLASHPOINT [° C]
TUNGARD FD Physiologically safe synthetic oil with multi-functional additive combination	<ul style="list-style-type: none"> Reduces wear Good creep properties ISO VG 32 (without solvent) 	<ul style="list-style-type: none"> Lubrication and care of compounds, chains, seals and all moving parts, can be used as a separating agent or corrosion protection 	Synthetic	0.81 with solvent	Colorless	> +61 with solvent
TUNGARD H1 Physiologically safe synthetic oil with multi-functional additive combination	<ul style="list-style-type: none"> Reduces wear Good creep properties ISO VG 150 (without solvent) 	<ul style="list-style-type: none"> Lubrication and care of compounds, chains, seals and all moving parts 	Synthetic	0,82 with solvent	Colorless	> +61 with solvent
TUNSIL FB Physiologically safe, colorless silicone-based synthetic oil	<ul style="list-style-type: none"> Reduces wear Good protection against aging Colorless, non-staining Eliminates squeaking noises Very good material compatibility 	<ul style="list-style-type: none"> Lubricant for all types of machinery in the food and plastics industries For the protection and care of sliding surfaces, mold lubricant in the plastics industry 	Synthetic	0,79 with solvent	Colorless	< +-0 with solvent
Micrologic Premium 903 Fully synth. rust remover with excellent lubrication and corrosion protection properties	<ul style="list-style-type: none"> Very good creep properties Protects against corrosion, crystallization and moisture Dissolves oxidized screw and plug connections in seconds 	<ul style="list-style-type: none"> Protection against corrosion and wear on all machinery, equipment and systems throughout the industry 	Synthetic	0,77	Yellowish	> -80

CLEANER

PRODUCT DESCRIPTION	PERFORMANCE	FIELD OF APPLICATION	DENSITY ⁴ (20 °C) [g/ml]	COLOR	FLASHPOINT [° C]
TUNCLEAN FDB Hydrocarbon-based, physiologically safe cleaner	<ul style="list-style-type: none"> Residue-free cleaning Removes oils, resin crusts and large grease deposits 	<ul style="list-style-type: none"> Cleaning and temporary lubrication in physiologically and ecologically sensitive areas 	0,77	Colorless	> +36
TUNCLEAN 700 Special cleaner made from hydrocarbon mixture	<ul style="list-style-type: none"> Residue-free cleaning Good material compatibility Good solvent power with minimal and org. residues 	<ul style="list-style-type: none"> Special cleaner for the highest demands in metal degreasing / plastic cleaning, attacks dirt by infiltration 	0,76	Colorless	> +61



PRODUCT TYPE	DESCRIPTION															APPLICATION							Maintenance	Cleaner		
		Dispenser	Aerosol can				Cartridge		Grease can	Bucket		Canister	Barrel				Gears	Roller bearings	Chains	Hydraulic	Compressors	Plain bearings			Fittings	Corrosion protection
		g	ml				g		kg			Ltr	Ltr	kg	Ltr											
100	300	400	500	400	800	1	10	25	20	60	180	200														
TUNGREASE	300						●	●	●								●				●	●				
	CS-Series	●		●		●		●	●	●			●				●	●			●			●		
	CSH-2					●		●	●	●			●				●	●			●					
	DAB					●		●	●	●							●	●			●					
	H1/EP-Series					●		●	●	●						●	●				●					
	ST-3							●	●		●						●	●			●	●				
TUNGEAR	H1-Series									●				●	●	●										
	PG-Series									●				●	●											
TUNFLUID	TAC				●													●						●		
	DAB				●					●				●				●								
	LG									●				●			●	●								
TUNAIR	PAO									●				●					●							
TUNGARD	FD			●																			●	●		
	H1			●																			●	●		
TUNSIL	FB			●																			●	●		
MICROLOGIC PREMIUM	903		●																				●	●		
TUNCLEAN	FDB				●																				●	
	700										●			●											●	

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