



Quadrant Engineering Plastic Products offers both homopolymer and copolymer grades of ERTACETAL including an enhanced bearing grade material.

MAIN CHARACTERISTICS

- High mechanical strength, stiffness and hardness
- Excellent resilience
- Good creep resistance
- High impact strength, even at low temperatures
- Very good dimensional stability (low water absorption)
- Good sliding properties and wear resistance
- Excellent machinability
- Good electrical insulating and dielectric properties
- Physiologically inert (most grades are suitable for food contact)
- Not self-extinguishing

APPLICATIONS

Gear wheels with small modulus, cams, heavily loaded bearings and rollers, bearings and gears with small clearances, valve seats, snapfit assemblies, dimensionally stable precision parts, electrically insulating components.

rollers

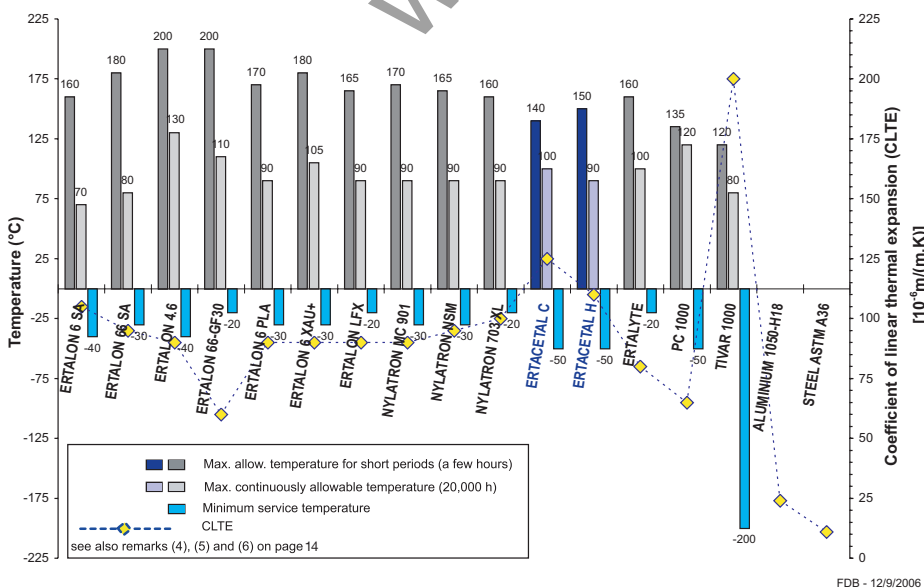


Challenges: Metal rollers in cargo truck lifts were being damaged in use.

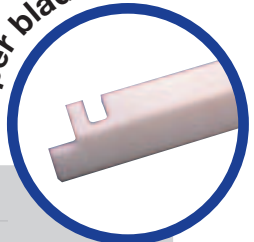
Solution: Impact resistant ERTACETAL C rollers absorb collisions with loading docks without deforming and causing the system to fail.

Benefits: Reduced weight and an ability to bounce back made the dimensionally stable ERTACETAL C rollers a better choice than other materials.

Fig. 2 MINIMUM AND MAXIMUM SERVICE TEMPERATURE IN AIR & COEFFICIENT OF LINEAR THERMAL EXPANSION
 (average value between 23°C and 100°C)



scraper blades



Challenges: Dairy nickel and stainless blades were costly and expensive to fabricate.

Solution: ERTACETAL C (porosity free POM-C) plate is machined into scraper blades used in commercial ice cream manufacturing equipment.

Benefits: The blades are easily cleaned and do not entrap dirt or bacteria. The low internal stress level of ERTACETAL C means parts that are machined flat, stay flat.



TECH NOTES: When it comes to outdoor applications, ERTACETAL is not recommended because of its poor UV-resistance.

Grades

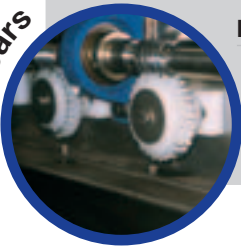
ERTACETAL®

Challenges: Vegetables are placed on a metal grid that advances through a freeze tunnel. This grid is supported and driven by stainless steel sprockets which are mounted on metal shafts. On one side of the tunnel, these shafts are driven by a worm - worm wheel combination.

Solution: The worm wheels are made of ERTACETAL C because of its high impact strength at -40°C and also its fatigue resistance.

Benefits: Lower overall cost and increased productivity because of less downtime.

worm gears



ERTACETAL C

(POM-C)

ERTACETAL C is Quadrant's copolymer acetal grade. Next to the standard natural grade, there is also a series of special colours available all showing an FDA food contact compliant composition.

The acetal copolymer is more resistant against hydrolysis, strong alkalis and thermal-oxidative degradation than the acetal homopolymer.

natural (white)*
black
colours*

ERTACETAL H

(POM-H)

ERTACETAL H is Quadrant's homopolymer acetal grade. It offers a higher mechanical strength, stiffness, hardness and creep resistance as well as a lower thermal expansion rate and often also a better wear resistance than the acetal copolymer.

natural (white)*
black

ERTACETAL H-TF

(POM-H + PTFE)

ERTACETAL H-TF is a DELRIN® AF Blend, a combination of TEFLON® fibres evenly dispersed in a DELRIN® acetal resin. Much of the strength that is inherent in ERTACETAL H is retained. Some properties change due to the addition of TEFLON® fibre which is softer, less stiff and slipperier than virgin acetal resin.

Compared with ERTACETAL C and H, this material offers superior sliding properties. Bearings made of ERTACETAL H-TF show low friction, long wear and are essentially free of stick-slip behaviour.

deep brown

Within its portfolio of Life Science Grade Engineering Plastic Products – specifically developed for applications in the medical, pharmaceutical and biotechnology industries – Quadrant offers **ACETRON® LSG** biocompatible engineering plastic POM-C stock shapes for machining with certified ISO 10993 compliance (see also page 32).



Food Compliant ERTACETAL C Colours

Yellow 10



Orange 20



Red 30



Blue 50



Green 60



Grey 70



Brown 80



Black 90



Table 1: FOOD CONTACT COMPLIANCE STATUS (1)

QUADRANT GEP STOCK SHAPES	BASE POLYMERS	EUROPEAN UNION	GERMANY	USA
		Directive 2002/72/EC	BfR	FDA Code of Federal Regulations (21 CFR)
ERTALON® 6 SA natural & blue	Polyamide 6	+	+	+
ERTALON® 66 SA natural	Polyamide 66	+	+	+
ERTALON® 6 SA & 66 SA black	Polyamide 6 & 66	-	-	-
ERTALON® 4.6	Polyamide 46	-	-	-
ERTALON® 66-GF30	Polyamide 66	-	-	-
NYLATRON® GS	Polyamide 66	+	+	-
ERTALON® 6 PLA natural & blue	Polyamide 6	+	+	+
NYLATRON® LFG natural & blue	Polyamide 6	-	+	+
other cast nylon grades	Polyamide 6	-	-	-
ERTACETAL® C natural (*)	Polyacetal Copolymer	+	+	+
ERTACETAL® C black	Polyacetal Copolymer	+/-	+/-	+/-
ERTACETAL® C Blue 50 & Black 90	Polyacetal Copolymer	+	+	+
ERTACETAL® C other colours	Polyacetal Copolymer	-	-	+
ERTACETAL® H natural	Polyacetal	+	+	+
	Homopolymer			
ERTACETAL® H black & H-TF	Polyacetal	-	-	-
	Homopolymer			
ERTALYTE® natural (*)	Polyethylene terephthalate	+	+	+
ERTALYTE® black	Polyethylene terephthalate	-	-	-
ERTALYTE® TX	Polyethylene terephthalate	+	+	+
PC 1000 natural	Polycarbonate	+	+	+

(1) This table gives the compliance of the **raw materials** used for the manufacture of the Quadrant EPP Stock Shapes **with respect to their composition** as set out in the regulations that apply in the Member States of the European Union (Directive 2002/72/EC, as amended), in Germany (BfR) and in the United States of America (FDA) for plastic materials and articles intended to come into contact with foodstuffs.

- + : complies with the requirements of the regulations
- : does not comply with the requirements of the regulations
- +/- : compliance depends on the shape (rod, plate or tube) and has to be examined on an individual basis
- (*) : 3-A Dairy compliant

P.S. Detailed "food contact compliance statements" can be downloaded from our website.