

COATS  
*gral*



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# Coats® Gral™ (Coarse Sizes)

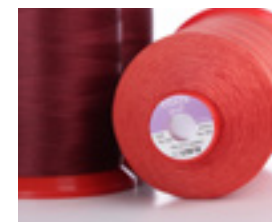
Coats Gral is a lubricated polyester thread made from pre-stabilised high tenacity continuous filament polyester. Its higher breaking strength and optimum stretch characteristics produces attractive, fine seams on leather footwear and leather goods. Gral is an excellent sewing thread for all types of leather and has very good abrasion resistance.

## WHY CHOOSE GRAL?

- Coats Gral is an excellent sewing thread for all types of leather and has very good abrasion resistance
- Its higher breaking strength and optimum stretch characteristics produces attractive, fine seams on leather footwear and leather goods
- The soft finish with superior low friction lubrication reduces the effects of needle heat and abrasion
- Coats Gral exhibits excellent loop formation, consistent stitch formation and neat seam appearance
- Certified to Öko-Tex Standard 100

## MAIN USES:

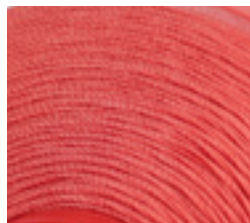
- Filtration
- Air-bags
- Seat belts
- Automotive interiors
- Suitcases
- Leather footwear
- Outdoor goods and sports equipment
- Lift slings
- Leather goods
- Multineedle quilting
- Mattresses



# Coats Gral (coarse sizes)

## PRODUCT RANGE

TEX	Ticket	Strength cN	Elongation % Min - Max	Needle Size Metric
40	60	2620	16 - 22	90 - 100
50	50	3260	16 - 22	90 - 100
60	40	4230	17 - 22	100 - 110
80	30	5200	17 - 22	130 - 140
105	25	6340	17 - 22	130 - 140
135	20	8360	18 - 24	140 - 160
150	18	9030	22 - 30	140 - 160
180	15	11400	22 - 30	140 - 160
240	12	14730	20 - 34	140 - 160
270	10	16630	20 - 34	160 - 180
350	8 / 9	19480	20 - 34	160 - 180
400	7	26410	20 - 34	160 - 180
450	6	29740	20 - 34	160 - 180



## THERMAL PROPERTIES

Melts at 250 - 260°C, softens at 220 - 240°C

Shrinkage less than 2.5% @ 150°C

## CHEMICAL PROPERTIES

Mineral acids:	Resistant to most mineral acids
Alkalis:	Essentially unaffected by weak alkalis, but less resistant to stronger alkalis, especially at higher temperatures
Organic solvents:	Generally unaffected, but soluble in some phenolic compounds
Bleaching:	Unaffected
Insects / microorganisms (mildew, rot):	Unaffected
Laundering / dry cleaning:	Unaffected
Moisture regain:	0.4%

## FASTNESS PROPERTIES

Washing at 60°C	(ISO 105 C10:2006 C(3))	Grade 4
Water Fastness	(ISO 105 E01:2010)	Grade 4
Rub Fastness	(ISO 105 X12:2001)	Grade 4
Hypochlorite Fastness	(ISO 105 N01:1993)	Grade 4
Dry Cleaning Fastness	(ISO 105 D01:2010)	Grade 4
Perspiration Fastness	(ISO 105 E04:2009)	Grade 4
Artificial Light Fastness	(ISO 105 B02:1994)	Grade 4



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