

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:

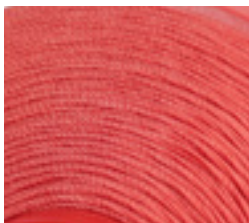
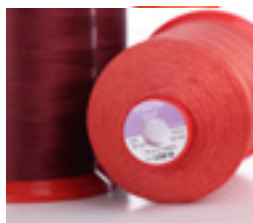
- Filtration
- Air-bags
- Seat belts
- Automotive interiors
- Suitcases
- Leather footwear
- Outdoor goods and sports equipment
- Lift slings
- Leather goods
- Multineedle quilting
- Mattresses



# 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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## EXPERT REAL WORLD SUPPORT

The final cost of any thread also includes hidden costs, fuelled by the methods and tools applied to it. Our experts know exactly how to reduce those costs, save time and increase productivity.



### One to One Visits

There's no need to come to us, our experts will travel to your site. In person, online or via the phone, our trained consultants deal with the kind of issues any busy factory may face, providing a solution for today and a blueprint for future efficiency.



### Training and Presentations

From thread selection to stitch formation, the use of colour to solutions for common production issues, we take the learning gathered through years of hands on experience and present it in the form of high impact seminars, workshops and presentations.



### Innovation Hub

Collaborate directly with expert R&D technologists at our Innovation Hub to create pioneering and tailored solutions for products ranging from Performance Materials to Apparel and Footwear. Equipped with state-of-the-art technology, we quickly turn ideas into prototype designs ready for manufacturing.

To drive your hidden costs down, talk to Coats. From thread audits in pre-production to the latest technological bulletins, we'll provide support that achieves measurable results.

For more information, talk to your Coats representative today or visit [coats.com/gral](https://coats.com/gral)

## OTHER PRODUCTS IN THE GRAL RANGE

To complement the Gral range, we also have a selection of specialist Gral threads. Each of these combines the superior properties of the Gral product with additional benefits specific to the end use.

Product Name	Description
<b>Gral for Apparel</b>	Lubricated continuous filament polyester for neat and attractive stitching.
<b>Gral AS</b>	Engineered for use as needle thread to prevent down migration during the sewing and lifetime of padded down jackets.
<b>Gral AST Anti-static</b>	Features a metallic conductive component which detracts electrical charge to prevent static build-up.
<b>Gral AWF (Apparel Sizes)</b>	Free of perfluorinated compounds (PFCs), best anti-wick thread choice for no-compromise, premium water-resistant outdoor wear and rainwear.
<b>Gral AWF (Coarse Sizes)</b>	Free of perfluorinated compounds (PFCs), best anti-wick thread for no-compromise, water-resistant outdoor footwear and accessories.
<b>Gral Multicolour</b>	An attractive and varied multicoloured continuous filament polyester sewing thread for eye-catching stitching.
<b>Gral Protect</b>	Sewing thread treated to give the finished thread anti-microbial / anti-fungal properties.

Special use Gral products are typically available across a select range of ticket sizes and technical information will in some cases vary from the above table.



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Since conditions and applications vary considerably in the use of a product, the customer and/or user should assure themselves that the product meets end customer requirements and is suitable for the intended end use. Coats accepts no liability for unsuitable or improper use or application of products. Information provided is based on current averages and should be taken only as indicative. Coats accepts no liability for the preciseness and correctness of the information provided. Product information sheets are updated for time to time, please be sure you are referring to the most recent publication. Coats supports customers with advice on individual applications on request; if you have any questions or concerns, please contact us. © Copyright reserved 2018

