



**K.A. Rasmussen**  
NORWAY

## **PGM CATALYST AND CATCHMENT GAUZES**

K.A.RASMUSSEN AS 2020

## K.A.RASMUSSEN AS

K.A.Rasmussen AS is the leading Nordic supplier of products based on precious metals. Silver, gold and platinum based products are supplied to industry, silverware, silver- and goldsmiths, dental technicians and laboratories.

As early as 1932 the company participated in the pioneering development of the first catalyst gauze for nitric acid in Norway.

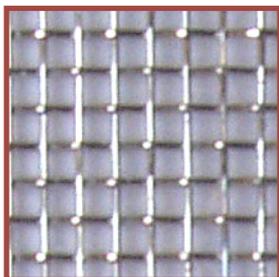
Catchment gauzes have also been produced for decades. Continuous development has contributed to our comprehensive skills in this field to day.

K.A.Rasmussen AS is certified according to ISO 14001, ISO 9001:2000 and ISO 13485 (medical devices).

## K.A.RASMUSSEN SUPPLY

K.A.Rasmussen supply knitted and woven gauzes in PGM - alloys, i.g platinum-, palladium- and rhodium - alloys. Gold, silver, nickel, steel, copper may also be supplied as gauzes.

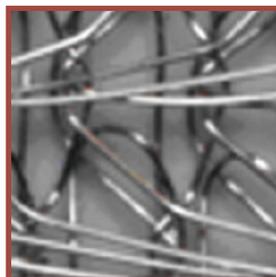
Manufacturing capability includes a range of PGM alloys, wire thickness, knitting and weaving configurations.



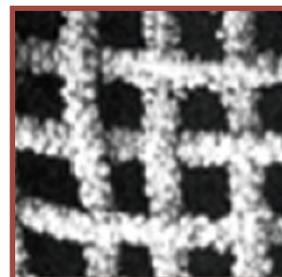
Woven



Circular knitted



Warp knitted with 2 warps



Used woven catalyst gauzes

## APPLICATIONS

### Nitric acid production by oxidation of ammonia

- A gauze package consists of catalyst gauzes, (eg. Pt-5%Rh) and catchment gauzes (eg. Pd-5%Ni)
- The most important factors regarding a gauze pack are: 1. Combustion yield, 2. Lifetime / campaign length, 3. Overall nett metal loss.
- Ammonia Oxidation Reactor types: Atmospheric, low, medium or high pressure.

### HCN - production by oxidation of ammonia and methane

- Gauzes (e.g. Pt-10% Rh) may be used as catalyst for production of HCN.

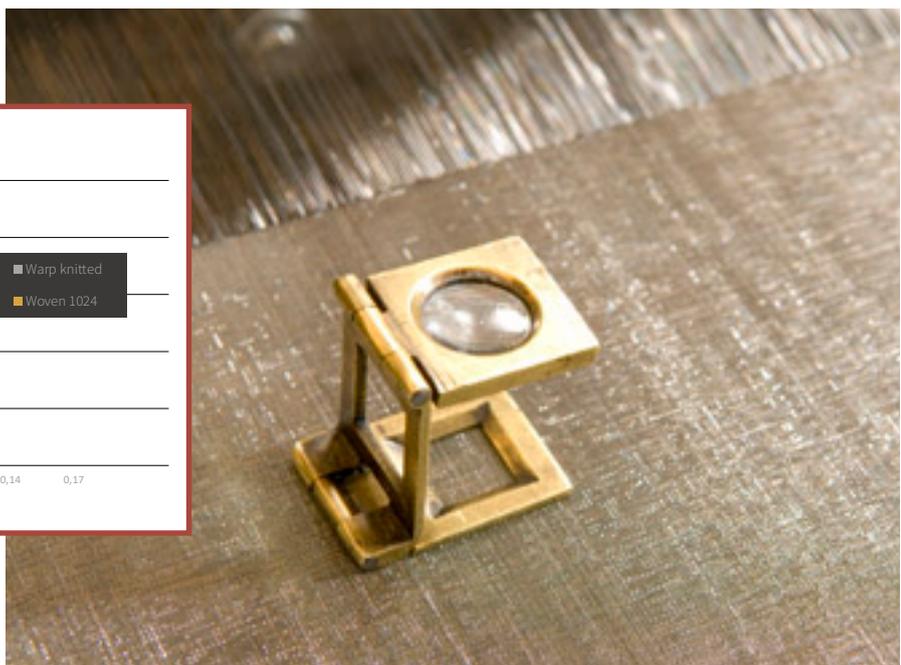
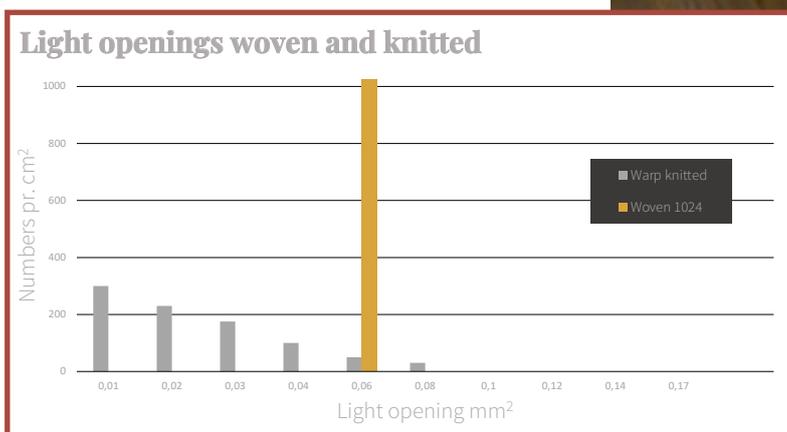
## DIMENSIONS AND MESH

- Wire thickness: Typical 60-120 micron.
- Woven gauzes: Mesh: 16-32 wires pr. cm in warp and inlay, i.e. 256-1024 mesh pr. cm<sup>2</sup>.
- Knitted gauzes: Gauzes are knitted with one or two sets of wires / warps. Weight of knitted will be approx. the same as woven depending on the pattern. There are a large number of possible knitting patterns including 9 in warp 1 and 13 in warp 2. Knitted gauzes are more elastic than woven.

### Mesh, light openings and weights with 75 micron wire

Woven or knitted	Wires pr. cm.	Mesh / cm <sup>2</sup>	Light opening, mm <sup>2</sup>	Weight, g /m <sup>2</sup>
Woven	16 x 16	256	0.3	312
Woven	32 x 32	1024	0.06	625
Warp knitted	1 or 2 warps	Ca. 1000	< 0.2	400 - 1000

Knitted gauzes from K.A.Rasmussen AS are developed to give a large number of small light openings and no light openings > 0.2 mm<sup>2</sup>.



## PROCESS AND EQUIPMENT AT K.A.RASMUSSEN

- Refining of used gauzes packages and low grade PGM materials to pure Pt, Rh and Pd.
- Alloying, melting and casting.
- Mechanical fabrication by forging, rolling and wire drawing.
- Weaving looms, warp knitting machine, pilot circular knitting machine
- Cutting and welding of gauzes and catchment gauzes rolled on aluminium tubes and packed in wood boxes.
- Analytic/chemical and physical metallurgical laboratory
- R&D department



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