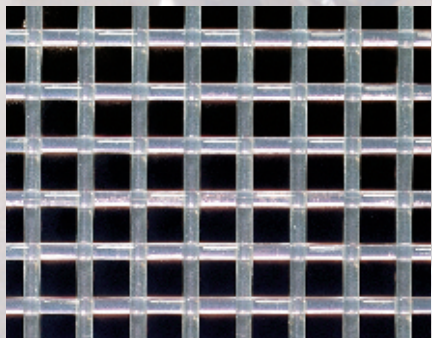
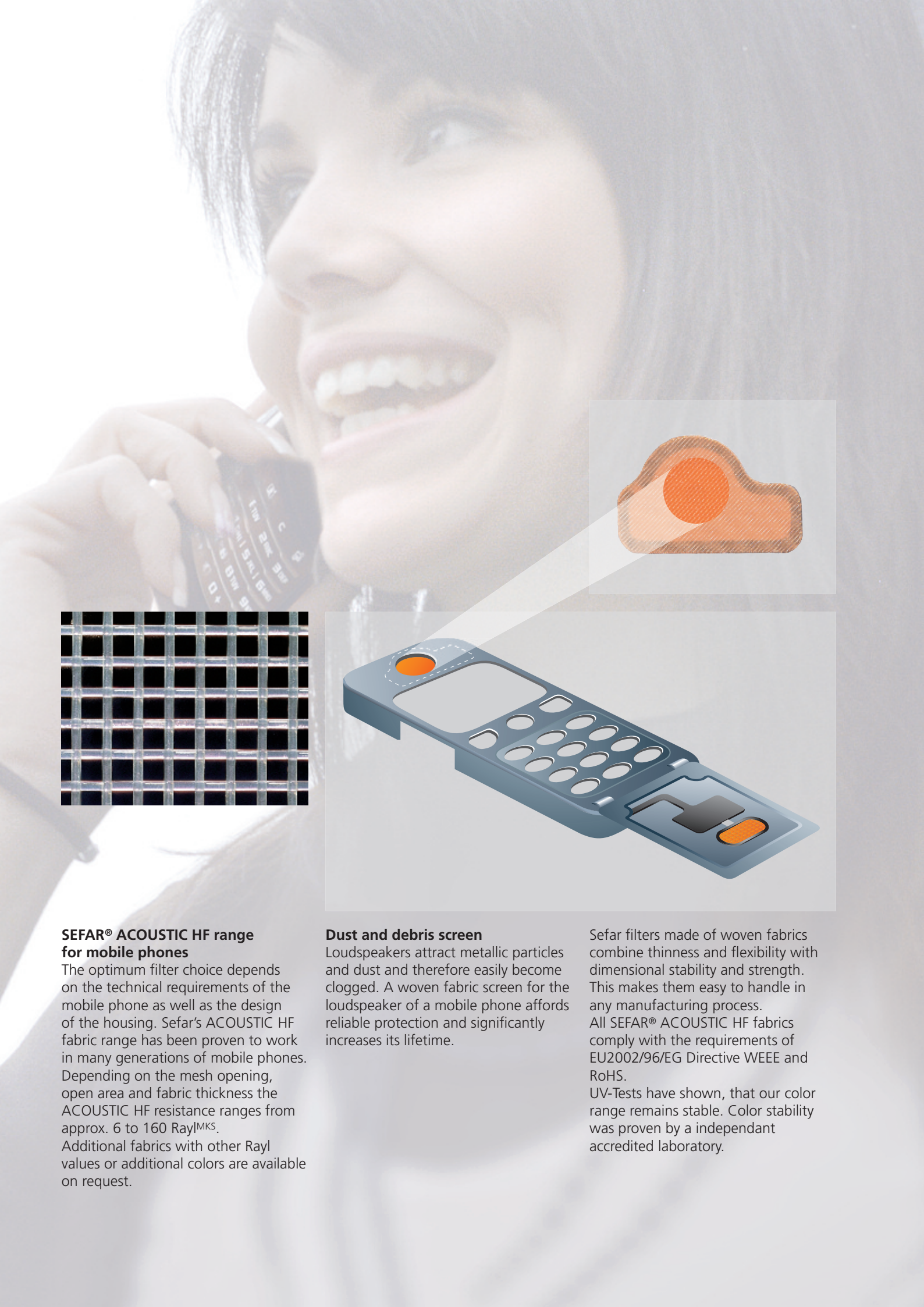




Filtration Solutions  
**Audio Devices**

**S E F A R**  
■ ■ ■ ■

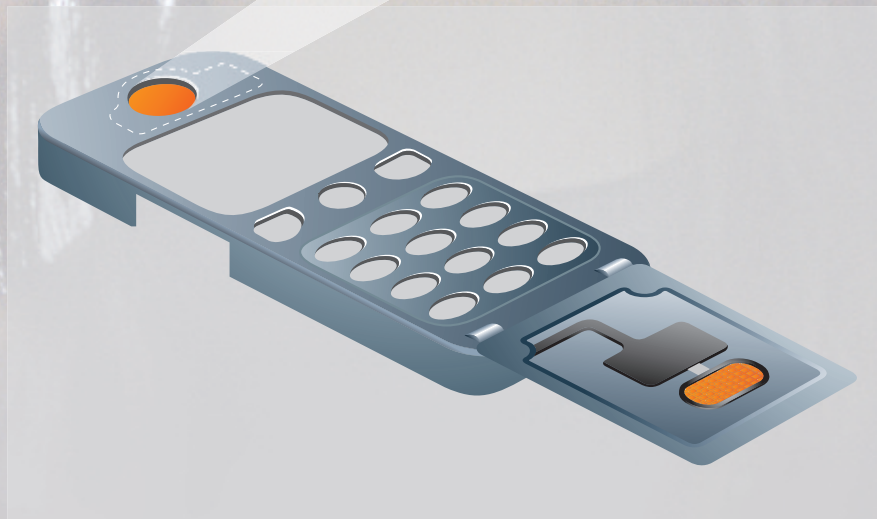
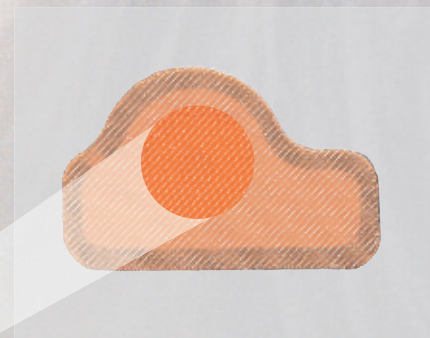


### **SEFAR® ACOUSTIC HF range for mobile phones**

The optimum filter choice depends on the technical requirements of the mobile phone as well as the design of the housing. Sefar's ACOUSTIC HF fabric range has been proven to work in many generations of mobile phones. Depending on the mesh opening, open area and fabric thickness the ACOUSTIC HF resistance ranges from approx. 6 to 160 Rayl<sup>MKS</sup>. Additional fabrics with other Rayl values or additional colors are available on request.

### **Dust and debris screen**

Loudspeakers attract metallic particles and dust and therefore easily become clogged. A woven fabric screen for the loudspeaker of a mobile phone affords reliable protection and significantly increases its lifetime.



Sefar filters made of woven fabrics combine thinness and flexibility with dimensional stability and strength. This makes them easy to handle in any manufacturing process. All SEFAR® ACOUSTIC HF fabrics comply with the requirements of EU2002/96/EG Directive WEEE and RoHS. UV-Tests have shown, that our color range remains stable. Color stability was proven by a independent accredited laboratory.

### ACOUSTIC HF dampening

Choosing a fabric with the right ACOUSTIC HF resistance will effectively filter out unwanted noise.

The ACOUSTIC HF performance of speakers and microphones is significantly enhanced by a filter made of a precision-woven fabric. A very reliable ACOUSTIC HF attenuation is guaranteed by the consistency of the air permeability made possible by the precise mesh openings. This consistency is much better than that obtainable using non-woven fabrics or paper filters.

Depending on how much dust protection required, manufacturers will choose either more dense fabrics having good dust protection and high ACOUSTIC HF damping or more open fabrics having less dust protection and high ACOUSTIC HF transparency. The details of the SEFAR® ACOUSTIC HF fabrics are shown in the table below.

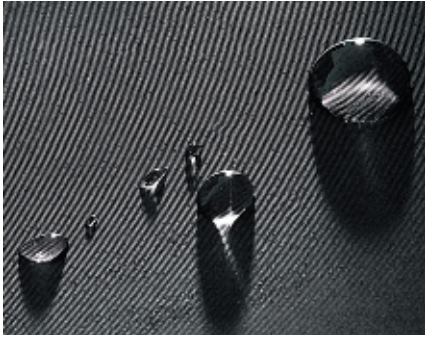


#### SEFAR® ACOUSTIC HF range

Fabric name	Material	Rayl <sup>MKS</sup>	Mesh opening µm	Fabric thickness µm	Options
SEFAR® ACOUSTIC HF 10-120	PET	10	120	105	Black Colors and hydrophobic coatings
SEFAR® ACOUSTIC HF 25-51	PET	25	51	60	Black Colors and hydrophobic coatings
SEFAR® ACOUSTIC HF 28-36	PET	28	36	38	Black hydrophobic Black and colors upon request
SEFAR® ACOUSTIC HF 34-39	PET	34	39	49	Black Colors and hydrophobic coatings
SEFAR® ACOUSTIC HF 46-36	PET	46	36	53	Black Colors and hydrophobic coatings
SEFAR® ACOUSTIC HF 90-41	PET	90	41	120	Black Colors and hydrophobic coatings
SEFAR® ACOUSTIC HF 160-20	PET	160	20	63	Black Colors and hydrophobic coatings

#### SEFAR® METALEN range

Fabric name	Material	Open area %	Mesh opening µm	Fabric thickness µm	Options
SEFAR® METALEN 07-120/41 AL	PET	41	120	105	Aluminum Other coatings upon request
SEFAR® METALEN 07-285/55 AL	PET	55	285	168	Aluminum Other coatings upon request

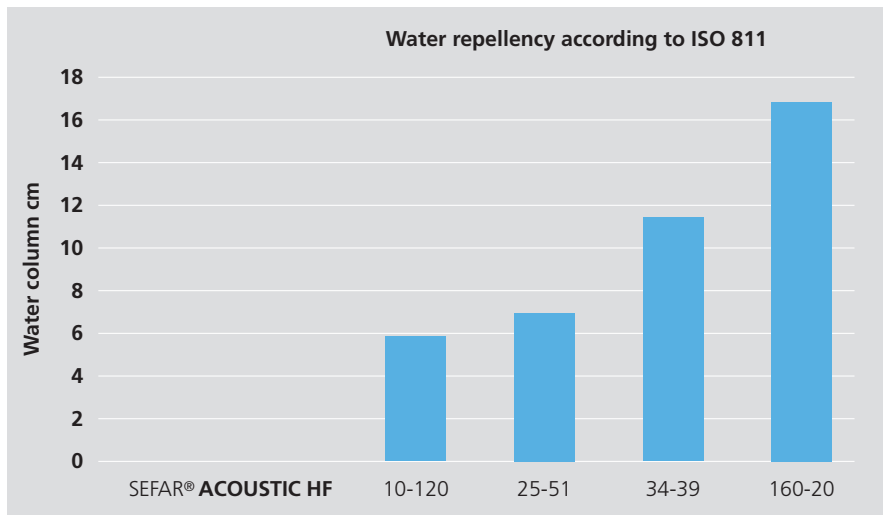


Sefar offers a choice of fabrics having high, medium and low water repellence

<b>High water repellence</b>		
SEFAR® ACOUSTIC HF 160-20	Hydrophobic	17 cm water column
<b>Medium water repellence</b>		
SEFAR® ACOUSTIC HF 34-39	Hydrophobic	11 cm water column
SEFAR® ACOUSTIC HF 25-51	Hydrophobic	7 cm water column
<b>Low water repellence</b>		
SEFAR® ACOUSTIC HF 10-120	Hydrophobic	6 cm water column

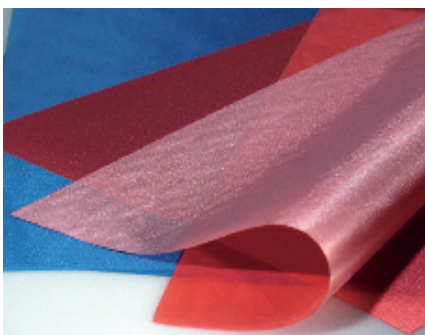
### Water repellence

Today mobile phones have to be designed for outdoor use in all weathers and must be able to withstand a few drops of water. The sensitive electronic components in the speaker and microphone have to be especially protected from contamination by water. This is accomplished by giving the woven filters a surface treatment that does not impair the sound transmission or speech quality, but makes them highly hydrophobic and very resistant to moisture uptake.



*Sefar's hydrophobic fabrics are tested according to ISO 811: Textile fabrics – determination of resistance to water penetration – hydrostatic pressure test.*

Glossy fabrics

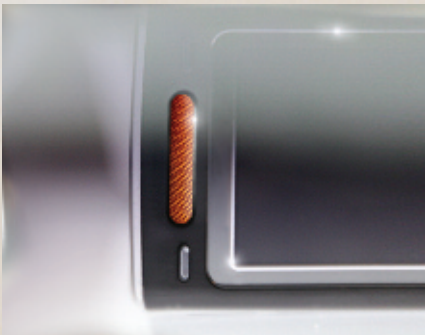


Colored fabrics



### Design

Mobile phones attract customers not only providing more functions but increasingly by having new colors and innovative designs. Loudspeaker filters are often a very visible part of the phone housing and therefore part of the overall look. For this reason Sefar supplies filter fabrics not just in black and white but also in any color or glossy effects required by the customer.

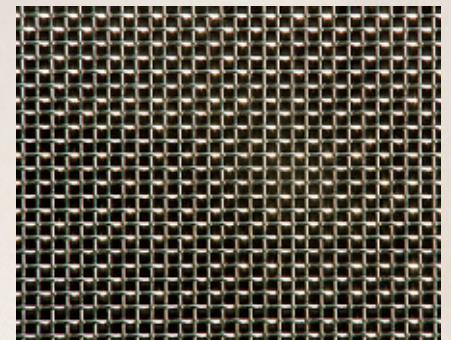
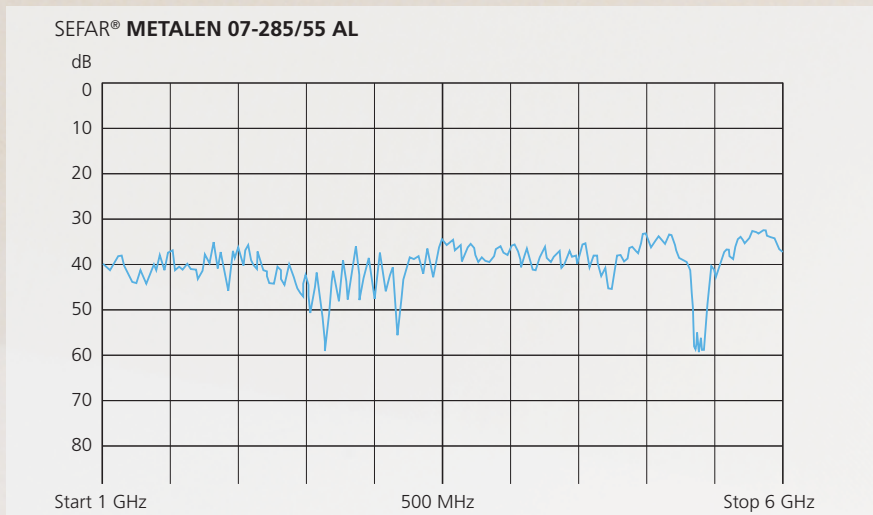


**SEFAR® METALEN – product range of conductive fabrics**

Conductive fabrics are widely used to prevent malfunctioning of electronic devices and to protect people from electromagnetic waves. Conductive fabrics prevent electric charge build up and are used to shield cables, gaskets, visual displays and instrument panels. They can also be used to provide shielding, lightning strike protection and electric grounding.

Sefar fabrics can be supplied having a metallic coating to improve its charge dissipation and shielding properties. A woven fabric having a metallic coating and used as a shield against electromagnetic radiation can attain an effectiveness of more than 99.99% (40dB). Due to the special coating technology the textile properties of the woven fabric are unchanged.

The typical EMI efficiency of a metallized fabric is shown in the following graph:



*AL coated mesh*

Sefar currently offers two standard fabrics with an aluminum coating. The full range of Acoustic fabrics can be metallized upon request.

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