



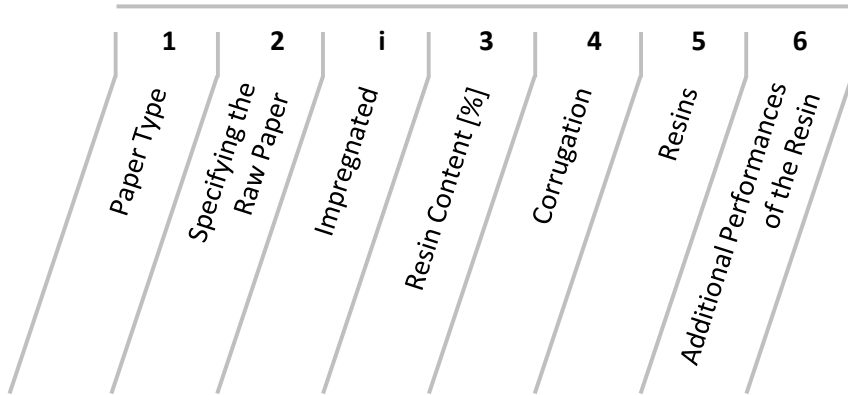
# *News & Facts*

4/2011



# Describing Neenah Gessner's Range of Filter Media.

## The Type Number System.



Neenah Gessner's filter papers consist of a raw paper together with a binder [resin]. Each media type number is split into two parts separated by an „i“. To the left of the i you'll find the raw paper number, and to the right of it, information on the binder type and other ingredients important to filtration performance.

Below you'll find an explanation of the various components and their relationship to each other.

### 1 – Paper Type

Position 1 in the type number consists of a code denoting the class of paper, based on air permeability. This gives four possible classifications.

- L 400-1.500 l/m<sup>2</sup>/s  
for passenger cars and full-flow oil filters
- L4 160- 300 l/m<sup>2</sup>/s  
for heavy duty and passenger car air filters
- H 300- 500 l/m<sup>2</sup>/s  
for passenger car air and full-flow oil filters with high efficiency rates
- K 5 – 150 l/m<sup>2</sup>/s  
for mainline fuel filters and applications involving very fine filtration.

### 2 – Specifying the Raw Paper

Position 2 consists of a number or number/letter combination such as 1-3, 1, 9 or PES, and it defines the composition and the technical characteristics of the raw paper. This, in other words, is the unique identification of the raw paper type.

Codes which indicate an alteration or addition to a standard paper are:

- PES polyester fibre content
- G structure of gradient

### i – impregnated

The „i“ confirms that the raw paper has been impregnated with a binder.

### 3 – Resin Content

The binder content in a media will normally be 20%. Only any deviation from it is mentioned; eg. 15%, 25% or 30%. These values are shown immediately after the „i“ by the numbers 15, 25 or 30.

### 4 – Corrugation

To conform to differing application and processing requirements, Neenah Gessner can supply paper either flat or corrugated. This can be gleaned from the type number by the following letter codes

- No letter: flat paper
- R corrugation
- TR deep corrugation

### 5 – Resins

Neenah Gessner offers a wide variety of resin systems to achieve the requirements for filtration performance and converting.

#### Curing at Converter

In this case, paper in an uncured state is made into pleated elements and the resin in the elements is then cured in a curing oven.

- Standard resin systems
- Novolak [N]
- Resole [HD]
- Novolak/Resole Mix [NHD]

- Fast-curing resin systems
- Phenol „Speedy Gessner“ [SG3]
- Phenol flame retardant [SGF2]
- „Zero Emission“ curing: Epoxy Zero Emission [ZE]

# Impregnations.

Different resins for differing applications.  
Some examples.

## Curing at Neenah Gessner

Here, Neenah Gessner carries out the curing process. The customer processes a filter media that has already been cured by us – a so-called non-cure filter media – and processes it directly into a filter element. The binder ingredients help to reduce production and energy costs.

### Standard Resins

- Epoxy [HP]
- Acrylic [HP2/HP3]

### Flame retardant Resins

- Acrylic [HPF]

### Phenolic Resins.

- Phenolic [XP]
- Phenolic flame retardant [XPF]

## **6 – Additional Performances of the resin**

For some special applications additional ingredients are necessary. These are coded as follows:

- F flame retardant
- H [hydrophobic]  
water resistant
- WR [water repellent]  
high water resistance
- DF [double face]  
one-side impregnated

## **Novolak/Resole Mix [NHD]**

By mixing these two phenolic resins, the respective advantages of Resole and Novolak can be combined. That means, firstly, improved processability and, at the same time, good wet stiffness as well as rapid curing.

## **Speedy Gessner [SG3]**

This very fast curing phenolic resin system is characterised by very full cross-linking. Due to its very good physical properties, it is excellent for air, fuel and oil filtration applications.

## **Speedy Gessner Flame Retardant [SGF2]**

Assured fulfillment of flame retardancy norm DIN53438, as well as fast curing and very good physical properties, are the features of these phenolic resin systems. They've thus made themselves the industry standard in air filtration .

## **Coalescer [CO]**

Hydrophilic impregnation for increased water permeability.

## **Epoxy [HP]**

This emissions-free, already cured resin system has particularly good chemical resistance and shows robust stability under wet conditions. Ideal applications: air and cabin-air.

## **Acrylic [HP2]**

This already cross-linked binder evidences important advantages in processing and has particularly good characteristics for air filter applications.

## **Non-cure and Flame Retardant [HPF and XPF]**

These two resin systems, based on cross-linked acrylic resin (HPF) and, in the case of XPF, phenolic resin, are both non-cure systems which ensure that flame retardancy norm DIN 53438 is achieved.

