Compound Development

Using the appropriate rubber product in specific applications is often critical for the functioning of the complete installation. It is not only the design of the rubber product which determines the performance, but also as and perhaps even more important is the material composition of the rubber formulation used. An incorrectly formulated compound can lead to premature product failure, warranty claims, significant cost and loss of reputation and image of your company. A high proportion of rubber product failures relates back to an incorrect choice of rubber type and/or poorly or non-optimally designed material composition.

Unlike many other materials, rubber formulations contain a lot of different ingredients - polymers, fillers, plasticisers, vulcanising agents, protective agents, process aids etc. - and to ensure your rubber product obtains the required final properties and durability it is important that the rubber formulation is composed correctly with regard to type and concentration of each separate ingredient. Furthermore, the production method – steam autoclave, salt bath, compression, transfer or injection moulding etc. – should be taken into account when developing a rubber formulation.

In principal can be stated that compound development is producing a processable mixture of an elastomer with the correct fillers and chemicals, that after vulcanization results in a rubber having the required properties and which can be manufactured for an acceptable price.

The reason for developing your own rubber compound formulation can be multiple:

- You need to fulfil or optimise an existing and specific specification
- You need a rubber product for a very special and/or innovative application
- You need to replace hazardous or restricted ingredients
- You want to have intellectual property and thus and improved quality control of your own recipe
- You want to change your product manufacturer

The basis for compound development can be a specification or data sheet, a specific standard like water, gas or central heating application, a distinct description of all conditions in application, but it can also be a current or competitor product. In this latter case we first determine the material properties of this product and perform Reversed Engineering by means of different chemical analytical techniques like TGA, FTIR, GCMS, SEM-EDX etc. to determine as accurate as possible the original material composition. These results will then be the start for a compound development project with comparable or preferably improved material properties and durability.

With our different mixing lines for both black and coloured compounds, our moulding possibilities, testing facilities and extensive knowledge and experience in rubber compounding, we are your ideal partner for development of your own rubber formulations for your specific rubber product applications. Using our in-house compound processing and material testing facilities we can develop, manufacture and test compounds and produce prototypes of your specific products to ensure they meet your specification requirements.

ELASTOMER RESEARCH TESTING B.V.

We have lots of experience in developing rubber formulations containing a complete range of natural and/or synthetic polymers like NR, SBR, CR, EPDM, (H)NBR, (F)FKM etc., for many different industrial areas like agriculture, food and pharmaceutical, potable water, oil and gas, central heating, off-shore and marine and specific industrial areas with for instance chemical or high temperature resistance requirements.

If you want to have owner ship of your own formulations, to increase the control of the quality of your rubber products or to improve some material properties, we are glad to make you a suitable offer.

For more specific information, please contact us:

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