

## Use of PROC 14 for calendering operations

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### Background on ETRMA identified uses and enquiries on choice of PROC 6/PROC 14

In 2009, ETRMA selected and made public a list of identified uses, considered to be representative to describe the use of chemical substances in the tyre and rubber industry, to allow chemical manufacturers and importers to homogeneously fulfill REACH Art. 10(a)(iii) requirements, i.e. inclusion in the registration dossier of information on the manufacture and use of substances.

Following the publication of the ETRMA use descriptors documentation, enquiries have been received asking the reason that use descriptor “PROC 6 - Calendering operations” was not selected and included with the other descriptors.

The below explanation of reasoning is therefore provided in regards to the choice between PROC 14 and PROC 6 for rubber industry calendering operations.

### Analysis of rubber manufacturing processes: appropriateness of PROC 14 for rubber calendering operations

The processes in which rubber compounds are shaped into components, subsequently assembled and cured to give a final article, are typically, milling (between rolls), extrusion (through specific dies) and homogenisation at a calender (roller mill), so called calendering. Typically, the temperature, during the above production steps, rises as high as to approximately 135 °C max.

As the rubber sector assessed the descriptions of PROC 6<sup>1</sup> and PROC 14<sup>2</sup> the following conclusions were reached:

- PROC 14, includes the processing of mixtures for the further transformation into products. On the contrary, PROC 6 makes no reference to the formation of an article.

<sup>1</sup> Calendering operations - Processing of product matrix Calendering at elevated temperature an large exposed surface

<sup>2</sup> Production of preparations or articles by tableting, compression, extrusion, pelletisation - Processing of preparations and/or substances (liquid and solid) into preparations or articles. Substances in the chemical matrix may be exposed to elevated mechanical and/or thermal energy conditions. Exposure is predominantly related to volatiles and/or generated fumes, dust may be formed as well.

- The description for PROC 14 "*may be exposed to elevated mechanical and thermal conditions*" gives a better indication that a range of temperatures could be experienced in the rubber processes. PROC 6 wording specifically seems to be limited to constant high temperature operations. The rubber process of calendering is not considered to be a high temperature operation, with operations such as mixing and curing being at considerably higher temperatures.
- PROC 6 specifically mentions "large exposed surfaces", which is not necessarily the case for calendering in the rubber sector. Calendering can occur for all shapes and sizes, with no specific stipulation to high surface areas.
- PROC14, differently from PROC6, mentions exposure to fumes.

## Recommendation

Based on the outcome of the investigations performed by ETRMA on this subject and taking into account the implications in term of description of exposure conditions, the use of PROC 14 "Production of preparations or articles by tableting, compression, extrusion, pelletisation" is recommended for milling, extrusion and calendering operations.

## Additional relevant ETRMA documents:

More information on REACH identified uses for tyre and general rubber goods manufacturing can be found on ETRMA website:

<http://www.etrma.org/activities/chemicals/reach/identified-uses>

## ETRMA contact person:

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