

Tyre Generic Exposure Scenario Production Rate Guidance

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Introduction

ETRMA expects that the manufacturer/importer will provide scaling rules as described in *Part G: Extending the SDS* in the REACH CSA TGD. This may include the inclusion of a scaling equation in the eSDS annex or identification of valid linear relationships for key determinants of exposure. To develop realistic baseline scenarios for use in the scaling equation, generic guidance is presented here regarding amount of substance used in region and fraction used by the largest customer. More information regarding the scaling equation is provided in the **ETRMA Scaling Equation Guidance**.

Amount of substance used in region

Production of tyres is widely distributed in Europe with at least 89 facilities distributed in UK, Spain, Portugal, Slovakia, Hungary, Romania, Poland, Czech Republic, Finland, Italy, France, Luxemburg and Germany (ETRMA, 2009). Therefore, the **10% rule** may be applied. Based on local production tonnage of tyres (>2000 t/y), the default number of days of 300 days/year is recommended.

Use by largest customer (main source)

The default fraction used by the main source in the ERCs is 100%. If necessary to develop a plausible ES for the scaling equation, a generic fraction of the main source less than 100% can be derived based on average production volume and the additive concentrations provided in the OECD Emission Scenario Document for the Rubber Industry (OECD, 2004).

Total production in 2007 was 4.66 million tons of tyres based on 89 facilities equating to an average production of 4.66 million tons / 89 facilities or a generic tyre production rate of **52,400 ton tyre/facility/year**. Rubber compounds and additives accounts for approximately 85% of the total tyre weight (Pré Consultants, 2001).

For example, for vulcanizing accelerators with a use concentration of between 0.2 phr (0.1%) and 2 phr (1%) in tyre compounds, a rubber compound fraction of 85% and a production rate of 52,400 ton tyre/facility/year, the local use rate would be equal to 148 to 1480 kg/day.

Minimum: (52,400 ton/year) x 0.85 x 1000 kg/ton x (0.2/100 phr) / (2 recipe factor) / (300 days/year) = 148 kg/day

Maximum: (52,400 ton/year) x 0.85 x 1000 kg/ton x (2/100 phr) / (2 recipe factor) / (300 days/year) = 1480 kg/day

References

ETRMA 2009. Total European Tyre Production for 2007. Received May 28, 2009.

OECD. 2004. Emission Scenario Document on Additives in Rubber Industry.

Pré Consultants B.V., 2001. Life cycle assessment of an average European car tyre. Third Party Report Commissioned by BLIC.