Helsinki, 7 October 2022

Note for the attention of Dr Tim Bowmer, Chairman of the Committee for Risk Assessment

Ref: Request to the Committee for Risk Assessment to review the RAC opinion in relation to the harmonised classification of Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica

The Committee for Risk Assessment (RAC) is requested to review the acute toxicity classification of 'Silanamine' as adopted by RAC in its opinion of 5 December 2019.

1. Background

On 5 December 2019, RAC adopted an opinion on Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl), hydrolysis products with silica; pyrogenic, synthetic amorphous, nano, surface treated silicon dioxide (HMDZ-treated SAS; EC Number 272-697-1).

The dossier submitter (France) had proposed a classification for Specific Target Organ Toxicity Repeated Exposure 2 (STOT RE 2) for effects on the lung by inhalation. RAC, taking into account also a number of additional studies from the open literature and applying a weight of evidence approach, considered that the forms of hydrophobic synthetic amorphous silica (SAS) described in the opinion have an acute inhalation effect in the rat. A key study with SAS-DDS, the results of which RAC considered to be relevant also for HMDZ-treated SAS, gave an LC50 of 0.45 mg/L and led RAC to conclude that the substance should in addition be classified for acute toxicity by inhalation Cat. 2, with an ATE of 0.45 mg/L. During the targeted consultation on the inhalation studies from the open literature, stakeholders had commented that the observed lethality was thought to be due to suffocation caused by the tendency of SAS to agglomerate, and thus a purely physical effect. RAC considered this aspect in the background document to the opinion, but stated that no findings supporting this mechanism had been reported in the studies, and that histopathological examinations point to acute respiratory distress syndrome rather than to suffocation. Following adoption and publication of the RAC opinion, manufacturers of the substance provided an additional study which examines the mechanism for the observed acute toxicity of HMDZ-treated SAS via the inhalation route. In the view of the submitters, the study confirms a physical obstruction of

the upper respiratory tract by agglomerated HMDZ-treated SAS as the cause of death by suffocation. They further consider that this effect cannot be extrapolated to the humans and, as a physical effect, does not fulfil the criteria for a classification for acute toxicity via inhalation. The submitted information package comprises a study report from a new GLP-compliant acute toxicity inhalation study, which was performed according to OECD TG 436 but goes beyond existing test guidelines for acute toxicity studies, as well as the existing studies examined by RAC, as it includes detailed characterisation of the exposure atmosphere and histopathological examination of the airways of exposed rats and blood oxygen monitoring. The data package further contains a document considering the human relevance of the effects observed in the inhalation studies with rats and a robust study summary in IUCLID format.

2. Terms of Reference

The new study by the inhalation route, which provides additional mechanistic examinations, appears relevant for the assessment of acute toxicity by inhalation and complements the information assessed by RAC. Therefore, in accordance with Article 77(3)(c) of REACH, RAC is requested to review the available information on acute toxicity by inhalation, taking into account the abovementioned aspects, and, if appropriate, to amend the opinion of 5 December 2019 in relation to the classification for acute toxicity by the inhalation route and/or the setting of an ATE for the classification of mixtures.

3. Timescale for the RAC opinion

Considering the limited scope of the request, it is considered that the opinion be prepared in a shorter time than usually required for an opinion on harmonised classification. The European Commission is also requesting ECHA to conduct a consultation, for which the duration could be reduced compared to normal harmonised classification-related consultations given the limited amount of information that is new compared to the information considered in the original CLH dossier.

Within 9 months after the receipt of this request (26 September, 2022), ECHA should finalise the analysis with a view to confirming or amending the opinion of 5 December 2019 in relation to the classification of Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl), hydrolysis products with silica; pyrogenic, synthetic amorphous, nano, surface treated silicon dioxide (HMDZ-treated SAS) for acute toxicity by inhalation and/or the setting of an ATE for the classification of mixtures.

4. Remuneration

The task for RAC following from this request is not considered to fulfil any of the requirements of a transfer of funds to the competent authorities of the Member States pursuant to Article 14(1) of Regulation (EC) 340/2008 and therefore no remuneration will be paid by the Agency.

(e-signed)[1]

Shay O'Malley
Acting Executive Director

Cc: Mike Rasenberg, Peter van der Zandt

[1] As this is an electronic document, it is not physically signed. This communication has been approved according to ECHA's internal decision-approval process.