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4/24/2012

Dear Sir/Madam,

We were very interested to learn about the start of the policy revision process for the Ozone Depleting Substances Project Protocols.

We have reviewed Version 2.0 of the U.S. and Article 5 ODS Project Protocols. To learn more about the suggested amendments we also followed the public workshop held in San Francisco in April via the webinar feed and now have a comprehensive overview and understanding of the background to the proposed changes.

We are therefore submitting the following comments for your consideration:

In our opinion, the proposed amendments represent a significant further optimisation of the ODS Project Protocols. They address and clarify certain elements in the earlier version that may have been imprecisely formulated.

In the following we would like to provide a number of additional comments on selected proposed amendments:

- Inclusion of CFC-13 and CFC-113

We have no problem with this proposal although we do not see any great practical relevance, as these ODS have never been found in household and commercial refrigeration equipment. We also doubt whether significant quantities of these ODS have ever been used in construction foams or other relevant applications. However, for the sake of completeness they should be included in both protocols.

- Scales: accuracy of within 1% of reading (Sec. 6.6)

In our opinion, even this proposed increase in the precision of the scales used will not rule out the possibility of weighing errors. We believe that it would be better to specify the maximum mass with which the scales can be loaded (up to x kg) and to specify a measurement accuracy in absolute terms (e.g. ± 0.1 kg or, equivalently, ± 100 g).

In the case of a weighbridge (or vehicle weighing platform) with a capacity of many tonnes, the specification “accuracy of within 1% of reading” does not represent an adequate description of the requirements to be met by the scales.

With respect to Update 2.0 of the U.S. ODS Project Protocol, we would like to draw your attention to two recent interrelated studies published by **Ingeniuergruppe RUK** (Germany) that are of direct relevance to **Section 5.1.2 ‘Calculating Baseline Emissions from Shredding and/or Landfilling ODS Foam Blowing Agents’**.

The two studies, which we enclose for your reference, both show that the final column in **Table 5.4 Emissions from Shredding and Landfilling ODS Foam Blowing Agents** concerning R11 degradation in solid waste disposal sites (SWDS) needs to be readdressed and possibly revised.

The final column of Table 5.4 presents values for the **‘Percent of released ODS blowing agent not degraded in an aerobic landfill conditions’**. The RUK studies show that the value of 5% specified for R11 does not reflect the conditions found in practice when ODS-containing PU foam is disposed of in landfill sites. The value of 5% specified in the final column of the table represents the percentage of non-degraded R11 that is released from the landfill. However, this value is only applicable in the case of mono-landfills (i.e. SWDS that contain only the shredder light fraction from end-of-life vehicle shredding facilities). According to the authors of the studies, such waste disposal environments are rare (see Section 4.1 of the second RUK report from March 2012). It is far more usual for shredder light fractions with ODS-containing polyurethane to be disposed of in municipal landfills. The conditions within a municipal SWDS are different. Higher temperatures and a greater degree of circulating air result in the release of up to 83.6% of non-degraded CFCs (see Table 1 of the RUK study from March 2012). Ultimately, the study shows that there will be a variety of different waste disposal scenarios that need to be differentiated when performing a baseline calculation and that the different landfill types in different countries and regions will be associated with different ODS emission rates. As a result of these findings, each project needs to apply a computational baseline model (based on conservative assumptions) in which the value used for the **‘Percent of released ODS blowing agent not degraded in an aerobic landfill conditions’** is appropriate for the local waste disposal conditions.

We therefore recommend that the column entitled ‘Percent of released ODS blowing agent not degraded in an aerobic landfill conditions’ in Table 5.4 of the U.S. ODS Project Protocol should be modified to take into account the results of the RUK studies. Instead of quoting a value of 5% for the CFC R11, the protocol needs to provide a direct reference to Table 1 of the RUK report from March 2012, which should also be incorporated into the protocol.

We very much hope that our comments and particularly our amendment proposal will help to further optimise the planned update (Version 2.0) of the U.S. and Article 5 ODS Project Protocols.

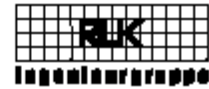
Should you have any questions regarding any of the above issues please do not hesitate to get in contact with us. **Ingeniuergruppe RUK** would also be pleased to provide assistance with any questions you may have regarding the enclosed RUK studies. Contact details are provided in the reports.

Yours faithfully

Dipl. Ing. Christoph Becker
Secretary to the RAL Quality Assurance Association

The annexes were already sent to Ms. Rachel Tornek a week ago.

Please click to open the pdf-files



**Landfill behaviour of CFCs in foams recovered
from end-of-life refrigeration equipment – Ap-
plication of results to specific waste disposal
scenarios**

by

Ingenieurgruppe RUK

Prof. Dr.-Ing. G. Rettenberger und Dipl.-Ing. S. Urban-Kiss, GbR

(hereafter: 'RUK')

on behalf of

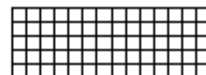
**RAL Quality Assurance Association for the
Demanufacture of Refrigeration Equipment**

[RAL-Gütegemeinschaft Rückproduktion von Kühlgeräten e.V.]

(hereafter: 'RAL Quality Assurance Association')

March 2012

Ingenieurgruppe RUK - Prof. Dr.-Ing. G. Rettenberger und Dipl.-Ing. S. Urban-Kiss - GbR
Begutachtung - Beratung - Projektplanung und Forschung für
Kreislaufwirtschaft - Diagonalmaschinen und Altlastensanierung
Ein Unternehmen im Verbund der RUK
Stuttgart - Trier - Longjumeau - Luxemburg





**Verhalten der in Dämmstoffen aus der
Kühlschranksaufbereitung enthaltenen FCKW
in Abfalldeponien**

[See p. 53 for Executive Summary in English]

erstellt im Auftrag der

RAL - Gütegemeinschaft Rückproduktion von Kühlgeräten e.V.

von der

Ingenieurgruppe RUK

Prof. Dr.-Ing. G. Rettenberger und Dipl.-Ing. S. Urban-Kiss, GbR

im August 2011

