

Asking admission for the further use of DMF in the textile coating

Seyntex is a textile company situated in Tielt in Flanders. As a user, in terms of Reach, Downstream User, to Seyntex the use of DMF is vital in the coating process. Until the end of the 80s Seyntex was a large textile company with several departments: spinning, weaving, dyeing, coating department, finishing and clothing. Due to the stricter European legislation and by the pressure of the low-wage countries the spinning and weaving departments were completely closed in the 90s.

The sewing business was also strongly limited to a minimal activity. The dyeing could be partially maintained by Seyntex specializing in high-tech finishing of the textile, that is mainly used for clothing and equipment for civil defense, firemen, military, ...

The heavy environmental pressures as well as the extra additional conditions in Flanders and in Europe caused a final closure of the dyeing department in 2010, despite of the extensive investments.

In the 70s Seyntex employed more than 300 workers and employees. Due to the stricter Flemish and European legislation and the well-known consequences for the textile sector, the number of employees was reduced to about 100 employees.

Currently, the establishment of Seyntex Tielt, as far as the production departments are concerned, is limited to a major coating, finishing and clothing department. The use of DMF is crucial for Seyntex, as it is specialized in very specific applications where a high quality coating (such as in fire-resistant, medical and highly resistant applications) is required.

In 1995, Seyntex started with the research of alternative coatings without DMF. Seyntex also looked for measures in order to minimize the use of DMF and to recover the DMF.

To protect the workers, the entire coating unit was provided with exhausting systems by which the whole hall is constantly held on light overpressure. The solvent vapors are directly exhausted from the furnace. The production hall as well, is being exhausted.

Serious investigations has been done to look for alternative coatings without solvents and to change the use of DMF to other solvents. Seyntex succeeded to switch to water-based finishing products for certain applications, but regarding the specialized applications, the possibility of using water-based finishing products is today impossible.

Together with research laboratories and industrial coating producers, Seyntex has investigated a lot on alternative solvents for over 10 years. Time after time, these tests were unsuccessful because of the inadequate quality level or due to production problems. Seyntex will continue to focus on alternative coating products, but, until now, Seyntex did not found an acceptable alternative. If the use of DMF would be prohibited, Seyntex will be obliged to stop the activities of the specialized coating, necessary for continued existence, which means a total closure of the activities of Seyntex.

In 1998, a scrubber has been placed in order to recover the emitted DMF. The DMF/water mixture from the scrubber is externally distilled and this recovered DMF has been re-used in the coating process of Seyntex again. That means a recovery of 60% of the used DMF.

Since the emission of DMF, mixed with other solvents such as MEK, cannot be recovered, Seyntex was looking for an alternative to avoid also these emissions.

Seyntex invested in a RTO (regenerative thermal oxidation) by which all solvents are being burned and converted mainly to CO₂ and water. In order to cope with the low concentrated solvent fraction from the production hall, additional investments were made in a roto-concentrator that provides an up-concentration of the low concentrated quantities of solvent in the hall so that it can also be burned in the RTO.

Seyntex seriously investigated in order to minimize the impact on the environment of the DMF-use in its coating department. So we kindly ask for a continuation of the use of DMF for the coating of textiles, so that the coating-department as well as the Seyntex company continues to exist in Flanders and Europe.

For the detailed discussion of limited environmental impact of DMF in the textile coating, we refer to the paper which has been transmitted by Fedustria (the federation of the Belgian textile, wood and furniture industries) and which you find enclosed.

Yours sincerely,



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Comments on ECHA's recommendation to include DMF in the Authorisation List

This paper reflects the concern Fedustria has due to the recommendation¹ of ECHA to include N,N-dimethylformamide (DMF) in Annex XIV (the "Authorisation List") of REACH.

Fedustria is the federation of the Belgian textile, wood and furniture industries and represents consequently the Belgian textile coating companies. The Belgian textile coating companies have specialised in polyurethane coating and have thus acquired a unique position in Europe. Thanks to this specific coating technology, these enterprises are capable of developing high-quality, demanding textile products that are mainly used in medical and highly technological fields such as protective clothing. The specific requirements essential to such applications, e.g. chemical resistant to cleaning and disinfection, thermoplastic behavior, etc. can only be realised by (aromatic) **polyurethane coating for which DMF is an essential solvent**.

General comments

The use of DMF in textile coating should be exempted from authorisation as there is sufficiently specific Community legislation that covers this use and the risks are adequately controlled. The reason for this exemption is extensively described in the section "uses exempted for authorisation".

Nevertheless we want to give some general comments on the overall approach described in the draft background document for the prioritisation for DMF.

Same approach for all aprotic solvents needed

Like most of the aprotic solvents, DMF is classified as a reprotoxic substance (Rep. Cat. 1B). At this moment, different aprotic solvents (DMF, NMP, DMAC) are treated in a different way under REACH. Some are considered under the restriction procedure (e.g. NMP), others are proposed to be handled under authorisation (DMF, DMAC). However there is **no scientific logic to handle very similar solvents under different regulatory approaches. Both the industry and many authorities are the opinion that it would be more logical and consistent to treat all aprotic solvents in an identical way (e.g. all under restriction).**

Level playing field ... also for imported goods

Authorisation will not bring any added value to the requirements already imposed by the VOC-Directive 1999/13/EC and the Directive 2009/161/EC (on occupational exposure limits) establishing a indicative occupational exposure limit value for DMF for the protection of workers from chemical risks.

Contrary to authorisation, restriction can apply to EU produced goods (articles) as well as to imported goods. It should be noted that authorisation will have as consequence that production will relocate towards non-EU countries. As in those countries there is no such stringent legislation, one may fear that goods that will be imported in the EU might not be REACH-conform and might as consequence pose a risk for the consumer. **Therefor restriction on article level is a better measure to protect the consumer and to guarantee a level playing field.**

¹ Draft 5th Recommendation of Priority Substances to be Included in Annex XIV of the REACH Regulation, June 24th 2013

Prioritization score does not reflect real use in textile coating

We can not share the high prioritization score ECHA's draft recommendation (dated 24th of July 2013) calculated for the inclusion of DMF in the Authorisation list. The use of DMF in the textile coating industry is not characterized as being wide-dispersive.

In the textile coating industry DMF is only used **in an industrial setting under controlled conditions** (environment and protection for worker exposure).

In order to minimize the emissions to the environment below the emission limits the substance DMF is recovered by scrubber distillation in a closed loop system. The remaining emissions are treated in a solvent after burner. Both technologies fulfill the strict emission limits imposed by both directives.

Use to be considered wide-spread instead of wide-dispersive

Wide-dispersive uses are characterized by use(s) of a substance on its own, in a preparation or in an article at many places (sites) that may result in significant releases and exposure to a considerable part of the population (workers, consumers, general public) and/or the environment. This means that uses taking place at many places, which however do not result in significant releases of a substance, may be considered only as 'wide-spread' but not as 'wide-dispersive'.

With regard to the textile coating, there are a limited number of sites with controlled emissions below the emission limits. Risk management measures are in place to control workplace exposure and emissions to the environment. Hence we cannot agree that a score of 9 is given to "wide dispersive use". **As release is controlled (meaning releases at the workplace may occur but that risk management measures are in place to control workplace exposure) the score 1 should be applied for "release", giving an overall score of 3 for "wide dispersive use". This results in a total score of 12 for prioritization**, instead of 18 as concluded in the draft background document for DMF.

Companies will delocalize in order to avoid distortion of competition

The fact that DMF will be prioritised for authorisation and that no valuable alternative is available, leads to high levels of uncertainty within the concerned textile coating companies, as authorisation is by definition limited in time. These enterprises will have to face significant costs involved by the application for this authorisation. In other words, it will result in an additional impediment of the competitiveness with regard to the non-European enterprises. Moreover, this uncertainty will curb every additional investment in Belgium. Potential investors will choose to delocalize new activities outside the EU.

Transitional arrangements

In case the use of DMF in the textile coating would not be exempted from authorisation, the transitional period should be as long as possible.

No alternatives

Despite several years of investigation, no valuable alternative to replace DMF has been found to this day. The only possible alternatives are similar (aprotic) solvents that have a similar hazard classification as DMF. In addition, alternative solvents such as DMAC (with poorer results with regard to quality requirements) have already been recommended or are subject to authorisation. Other possible non aprotic solvents such as DMSO give rise to technical problems due to physical properties (freezing and boiling point) and corrosion to the existing equipment, quality requirements (light brown color of DMSO limits possibilities) and environmental issues such as higher energy use (higher boiling point), limited recovery of DMSO and smell.

Water based polyurethane dispersions used to replace solvent based aromatic polyurethanes give poor results to quality requirements (such as thermoplastic behavior, chemical resistant to disinfection or sterilization) necessary for high performance technical textiles such as protective clothing.

Other possible alternatives to aromatic polyurethanes give also poor results to quality requirements such as thermoplastic behavior.

Textile coating producers have been using DMF for decades and over that period several coating properties have been improved step by step resulting in a better end use product. Some finished articles go into high tech and high protective applications (eg. medical health care, protective clothing, etc.). The specific requirements essential to such applications, e.g. chemical resistant to cleaning and disinfection, thermoplastic behavior, etc. can only be met by (aromatic) polyurethane coating for which DMF is an essential solvent.

It is very unlikely that the same properties will and can be achieved in a very limited time frame hence if textile coating is not exempted from authorisation a longer transitional period than the proposed 18 month is needed.

Use exempted from the authorisation requirement

Opposite to the conclusion in the draft background document for DMF, we are of the opinion that **specific Community legislation is in force that would allow exemption of use from the authorisation requirement on the basis of Article 58(2) of the REACH Regulation.**

Risks properly controlled by existing EU legislation

There is sufficient community legislation in place imposing the substitution principle and risk management measures relating to the protection of the workers and environment.

Protection of the health and safety of workers

DMF was included in the third list of indicative occupational exposure limit values (IOELVs) set up by Commission Directive 2009/161/EU (17.12.2009). IOELVs are health-based values derived from the most recent scientific data and correspond to threshold levels of exposure below which no detrimental effects are expected after short-term or daily exposure to the substance over a working life time. Member States were subsequently required to establish a national occupational exposure limit value, taking into account the Community limit value of DMF by 18 December 2011. Therefore, Directive 2009/161/EU properly addresses the occupational use of DMF and health risk in connection with its use.

Environmental protection

We are convinced that Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations establishes (VOC directive) the correct framework to guarantee that emissions from processes using DMF in the categories of activity described in Annex 1 (of Directive 1999/13/EC) are well controlled. **The coating processes in the textile sector using DMF are explicitly mentioned in this annex.** The VOC directive does not only set a **strict emission limit value of 2 mg/Nm³** for VOC-discharges containing substances that carry the risk phrase R61 (as DMF does), **it also obliges that substances or preparations containing VOCs with the risk phrases R61 shall be replaced as far as possible by less harmful substances or preparations within the shortest possible time** (see article 5 point 6 of the VOC directive).

The activities described in annex 1 of Directive 1999/13/EC are operated under conditions guaranteeing controlled exposure (public health and the environment). Monitoring and reporting obligations for companies as well as for member states are part of the directive.

In other words **as the VOC-Directive has the same objective as what is intended by authorisation (replacing by less harmful substances) under REACH, there is no need at all to apply additional obligations to DMF.** This very same obligation exist already for years under EU-legislation. The requirement to apply for an authorisation will hence not improve the protection of the environment or the workers.

As authorisation is not only a burdensome procedure but also very costly for the textile coating industry that consists mainly of SME, this will result in an additional impediment of the competitiveness with regard to the non-European enterprises.

Therefor we are of the opinion that textile coating as described in annex I of the directive 1999/13/EC (i.e. “any activity in which a single or multiple application of a continuous film of a coating is applied to textile and fabric ...”) should be exempted from authorisation.