



Downstream Users of Chemicals Co-ordination group



# *Extension of the GRA to professionals*

FEICA examples

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# Potential impacts

- The extension of the GRA to additional hazard classes will potentially affect an enormously number of uses
- A large proportion of these uses are performed by professional users
- There is a risk that adhesives and sealants - without any significant risk in practice - will be **banned without risk assessment**

# Potential impacts

Two examples:

- Product with a hazardous component used safely by professionals - brief mention to the diisocyanates training
- Questionnaire with professionals end users on experience with safety assessment

# OCF example

- OCF:
  - moisture curing **One Component** polyurethane **Foams** dispensed from pressurised containers.
  - typically used for gap filling, sealing, bonding, insulating for general construction and renovation purposes.
  - in most EU countries **polyurethane (PU) foam** is the **standard installation/joining material** to seal around windows in construction, due to its top insulation performance for **energy efficient construction**.
  - European OCF manufacturers estimate that over 100.000.000 cans of PU foam are used in the EU every year by well **over 500.000 professional end users**.



One-component polyurethane chemistry is a chemistry based on isocyanate-functional polymers which can react with ambient moisture to form the cured polymer.



# OCF example

- The hazard of OCF is driven by the monomeric isocyanate (MDI), which is classified as **respiratory sensitizer and may cause an allergic skin reaction**.
- Dermal exposure assessment: Under the conditions described for its intended use, there is **no dermal contact**.
  - Skin contact is avoided by the design of the can
  - Product cures in minutes
  - PPE's are worn (gloves)
- Inhalation exposure assessment:
  - measurements of MDI on OCF products, containing approximately 15% of MDI monomer, were approx. **83 times below the Occupational Exposure Limit** applicable at the time and even below the new proposed OEL (after 2029):

| EC No | CAS No | NAME OF THE CHEMICAL AGENT                                                                               | OEL LIMIT VALUES |     |            |     | Notation                                   | Transitional measures                                    |
|-------|--------|----------------------------------------------------------------------------------------------------------|------------------|-----|------------|-----|--------------------------------------------|----------------------------------------------------------|
|       |        |                                                                                                          | 8 hours          |     | Short-term |     |                                            |                                                          |
|       |        |                                                                                                          | µg NCO/m³        | ppm | µg NCO/m³  | ppm |                                            |                                                          |
| -     | -      | Diisocyanates, O = C=N-R-N = C=O, with R an aliphatic or aromatic hydrocarbon unit of unspecified length | 6                |     | 12         | -   | Dermal and respiratory sensitization, Skin | 20 µg NCO /m³ as STEL and 10 µg NCO /m³ as TWA till 2029 |

- These **results of the measurements are realistic applications**, in realistic environments.
  - The results obtained show an **extremely low inhalation exposure**
  - In the theoretical extremes, with high volumes extruded in a short time, and a large surface in contact with air (which is not intended in real applications), results are also extremely low, clearly because MDI is **not a volatile substance** at room temperature.

# OCF example

## Measurement results

Measurements are well below the OEL

| Data measurement on site                       | Operator                                                       | Sampling                          | Worst case results measured   | Result spread over Average 8 hours                                                                  |
|------------------------------------------------|----------------------------------------------------------------|-----------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------|
| A – Window and door installation               | Installation 2 doors/5 windows                                 | 24 minutes extrusion              | 0,00079 mg/m <sup>3</sup> MDI | 0,00004 mg/m <sup>3</sup> MDI                                                                       |
| B – Window installation                        | Installation 13 windows                                        | 16 minutes extrusion              | 0,00009 mg/m <sup>3</sup> MDI | 0,000002 mg/m <sup>3</sup> MDI                                                                      |
| C – Window and door installation               | Installation 8 windows/1 door                                  | 30 minutes extrusion              | 0,00046 mg/m <sup>3</sup> MDI | 0,00003 mg/m <sup>3</sup> MDI                                                                       |
| Data measurement including laboratory          | Operator                                                       | Sampling                          | Detection level               | Results above detection limit                                                                       |
| D – Laboratory and on construction site floor* | Extrusion of 30 cans of foam (17 in laboratory and 13 on site) | 30 minutes extrusion              | 0,0005 mg/m <sup>3</sup> MDI  | Only 1 out of 8 measuring devices gave a result above detection limit: 0,0006 mg/m <sup>3</sup> MDI |
| E – Laboratory                                 | Extrusion of 10 cans (two times batches of 5 cans of foam)     | 36:30 and 32:20 minutes extrusion | 0,0005 mg/m <sup>3</sup> MDI  | Out of 7 measuring devices, none gave a result above detection limit                                |

\*These conditions were highly unrealistic scenarios

### Typical scenario under which OCF is used:

*A team of two people would install typically 5-10 windows/doors a day, translating into up to 3 cans.*

### Worst case scenario:

*The worst-case scenario based on our description would be a 12 can usage in one day, indoors, and cleaning the gun on that same day. A theoretical maximum of 30-40 average sized windows/doors installed a day amounts to 10-12 cans a day.*

# OCF example

- Because data measurement D and E (laboratory and on construction site floor) in the table were measured over a larger number of cans with a sampling time much higher than the surface curing time of the first extruded foam cans, it is also clear that **inhalation exposure does not increase during curing of the foam**. This is again not surprising in view of the low vapour pressure of MDI.
- Curing time: the formula contains a catalyst in a highly reactive pre-polymer, because it is designed to **cure in minutes**. All remaining monomers therefore will cure accordingly.
- OCF products typically have formed a tack free surface within 10 minutes, and in extreme conditions (very low temperature and humidity) it can take up to 1 hour

# The OCF example

- The OCF is one of many examples of products with safe use for professionals
- Under the conditions described for this intended use, we can conclude that OCF products intended for gap filling, sealing, bonding, insulating for general construction and renovation purposes, constitute an intrinsically **safe product**/use combination.
- This example and the measurements indicate that it is not justified to generally ban products based on their hazards, like respiratory sensitizing properties and/or based on professional use.
- Safe use can be guaranteed. It is important to take into account that **the type of use is already safe.**
- **It is disproportionate to ban such type of use without a risk assessment**



# Examples level of protection professional users

- Types of companies
  - Applications in the construction sector, e.g. resins injection, refurbishment, waterproofing
  - Application of flooring adhesives, e.g. parquet laying
  - Furniture production, e.g. kitchen furniture
- Present in different EU Member states: Belgium, Sweden, Spain, Germany, Denmark, France, Netherlands, Luxembourg

# Measures in place

- 92% of the respondents carried out a risk assessment when chemicals are handled in the workplace
- 92% of the respondents derive information on the safe use of chemicals from SDS, 72% from labels, 16% exposure scenarios, 68% own workplace assessments
- 96% of the respondents use protective gloves, 92% use goggles, 72% protective clothing

# Training levels

- 40% of the employees followed external vocational training
- 68% of the employees went through internal training at the time of employment
- 76% of the employees go through regularly repeated internal training
- 76% of the employees receive task specific training
- 44% of employees benefit of written workplace specific instructions

# The diisocyanates training

- As of 24 August 2023, **training** is required for all professional and industrial users of products with a total monomeric diisocyanate concentration of > 0.1%.
- **A comprehensive training programme was launched to ensure the safe use of diisocyanates for producers and professional users all over Europe.** In this way, these Downstream Users ensure that all end-users of PU containing products across Europe continue to handle diisocyanates safely across Europe.
- Under the conditions described for this intended use, we can conclude that OCF products intended for gap filling, sealing, bonding, insulating for general construction and renovation purposes, constitute an intrinsically **safe product/use** combination.
- This example and the measurements indicate that it is not justified to generally ban products based on their hazards, like respiratory sensitizing properties and/or based on professional use.
- Safe use can be guaranteed. It is important to take into account that **the type of use may already be safe.**