

REACH Congress 2021

REACH and Worker Protection

21st and 22nd April 2021

Restriction on Diisocyanates

Industry Concept for training employees in handling diisocyanates

Agenda

ISOPA & ALIPA

Industry Concept

Q & A

Who are ISOPA and ALIPA?

ISOPA



ISOPA is the European trade association for producers of diisocyanates and polyols - the main building blocks of polyurethanes.

ALIPA is the European Aliphatic Isocyanates Producers Association

ALIPA



PRODUCT STEWARDSHIP

Isopa and ALIPA members continuously improve safety, health and environmental standards across the European polyurethanes industry

ADVOCACY

Isopa and ALIPA members engage with policy makers at EU & national level to deliver most relevant information and data

COMMUNICATION

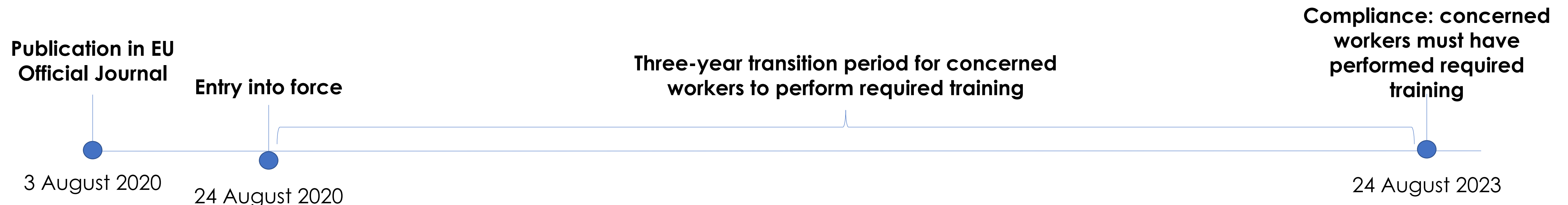
Isopa and ALIPA communicate with all stakeholders inside and outside industry

Diisocyanates under REACH

Commission Regulation (EU) 2020/1149

- REACH Restriction on **Diisocyanates** published on **3rd August 2020** in the Official Journal of the European Union
- Introduces **new minimum training requirements** for **workers** handling diisocyanates and mixtures containing diisocyanates.

The Industry agrees with ECHA's assessment that the Restriction is the most effective and efficient measure to enhance occupational health and safety





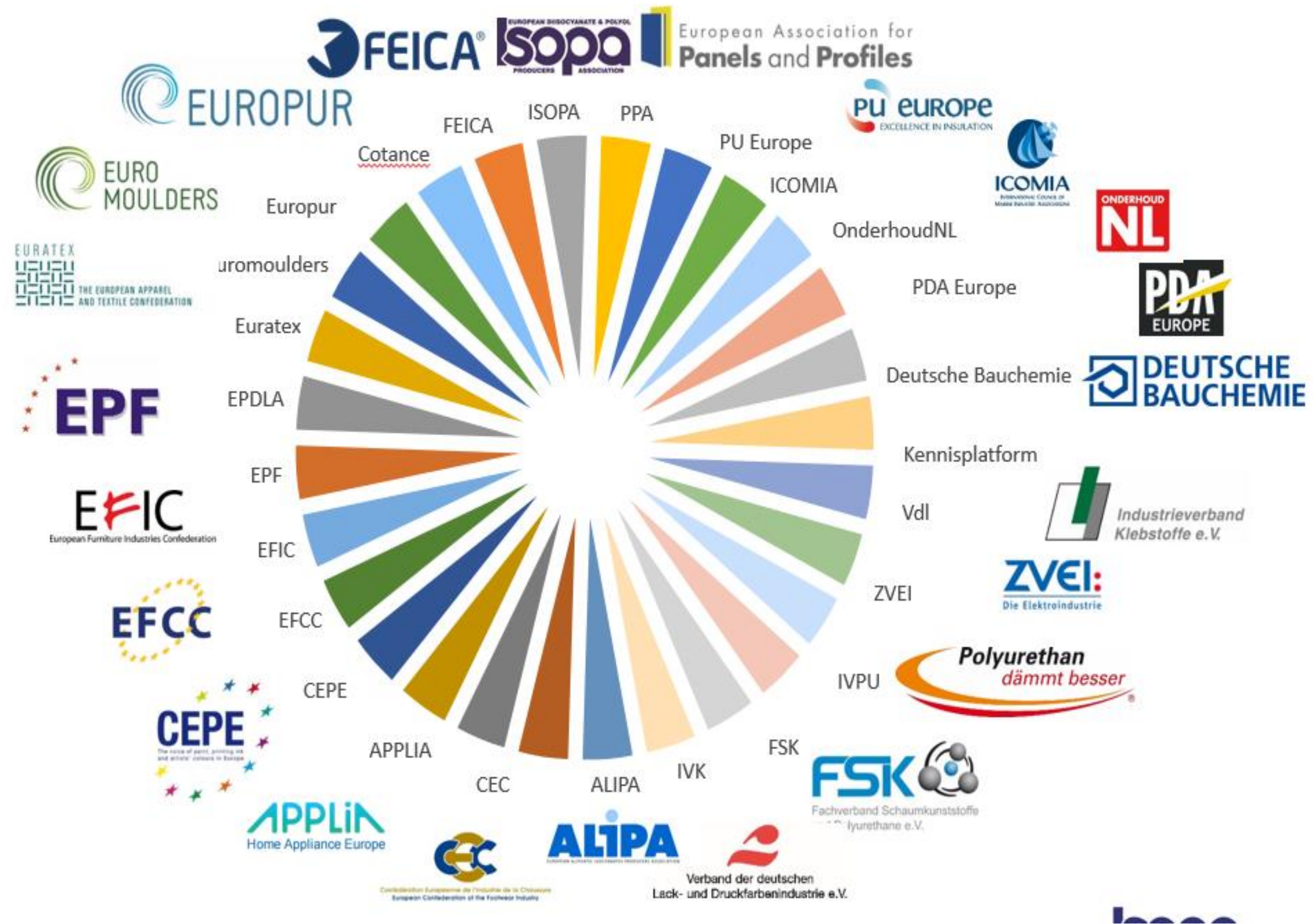
Training for workers

Online training material platform.

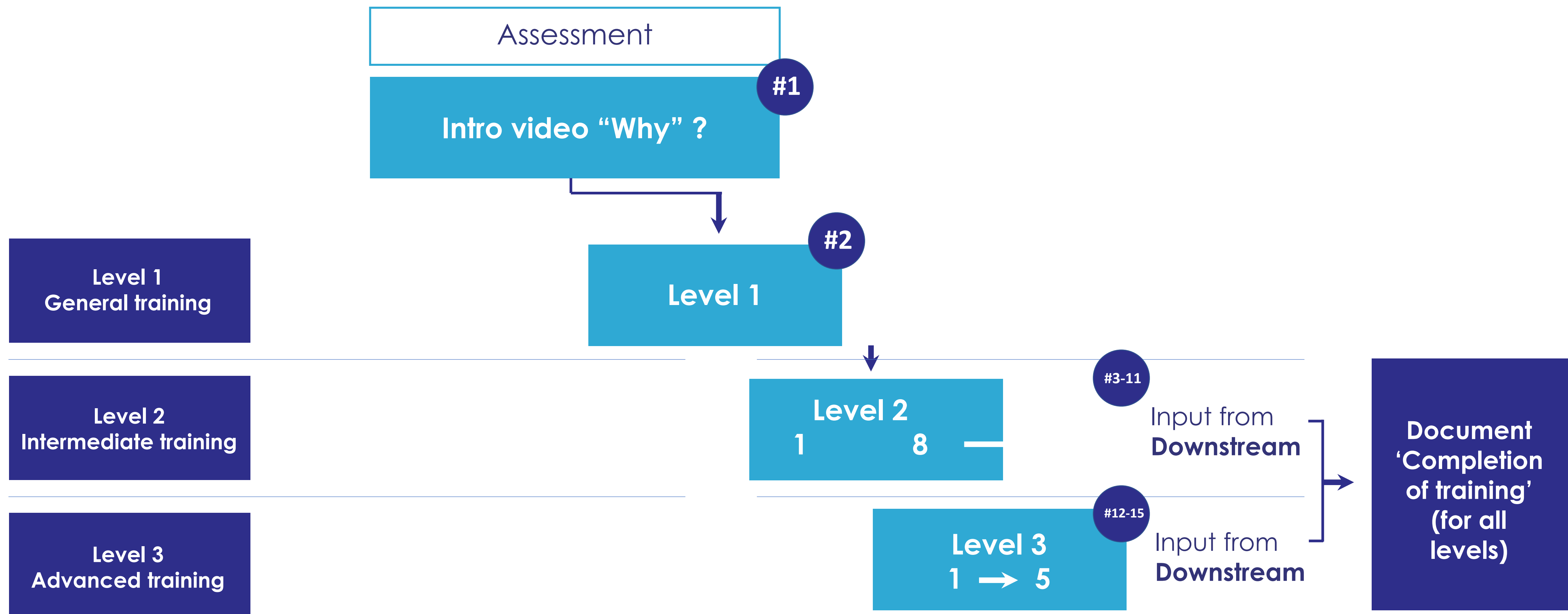
- ISOPA/ALIPA are already working together with other industry-associations on an online training material platform
- The platform will provide the different levels of training required based on the risk categorization of the tasks that diisocyanate workers perform in line with the requirements of the REACH restriction.

Joint Industry Effort

- 2014, ISOPA and ALIPA created a **PU Exchange Panel**, a forum for discussion and exchange between all trade associations representing sectors affected by the Restriction. The group includes over 30 associations.
- In 2018, ISOPA, ALIPA and major downstream sector association have joined efforts to put together the Teaching Material.



Training Structure



Sample slides of Training Level 1

Know the risks

Work in a safe environment

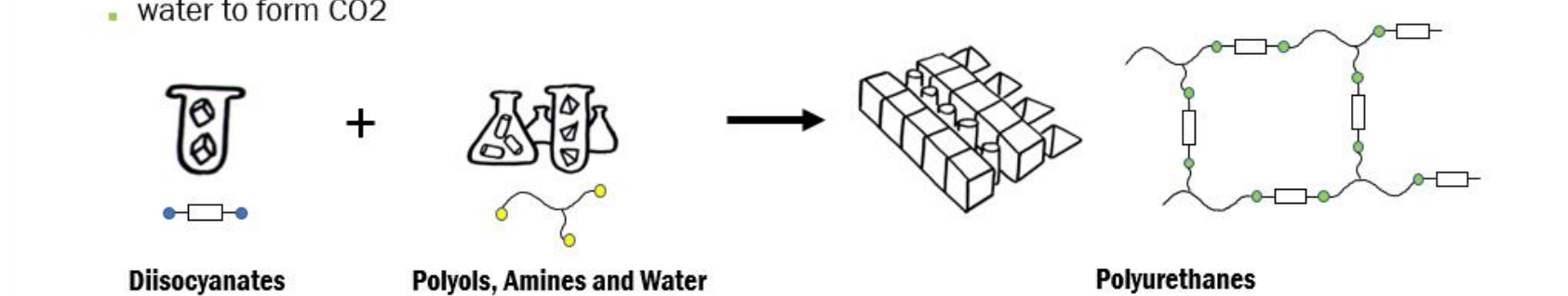
Protect yourself and others




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Chemistry of diisocyanates

- Diisocyanates are reactive chemicals and react with:
 - polyols to make polyurethanes
 - amines to make polyurea
 - water to form CO₂



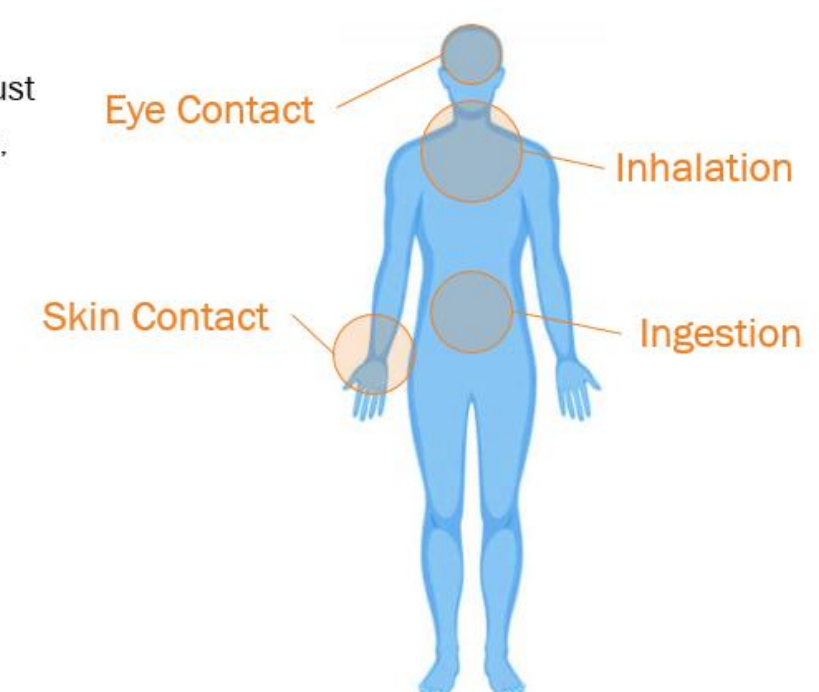
Diisocyanates + Polyols, Amines and Water → Polyurethanes



(c) ISOPA / ALIPA

How can diisocyanates harm you?

- By splashes into your eyes
- By inhaling vapours, aerosols (fine droplets) or dust
- By swallowing if you eat after handling chemicals, without washing hands first
- If liquid touches your skin and by contact with contaminated surfaces



Eye Contact

Inhalation

Skin Contact

Ingestion


There can be no health impact if diisocyanates are prevented from entering the body with the right Risk Management Measures.

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Industrial Hygiene Basics

When working with diisocyanates **always**:

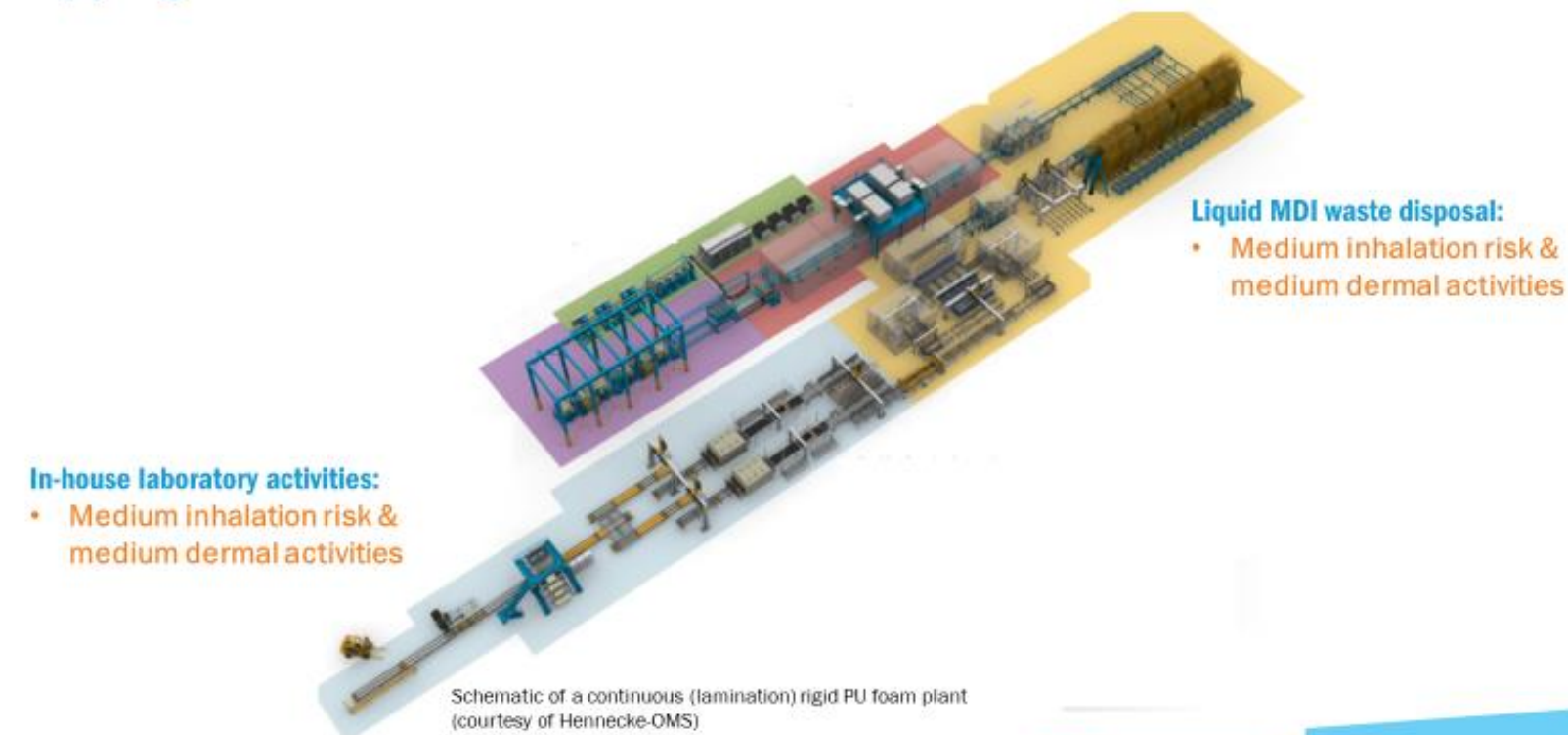
- Avoid inhalation of vapour
- Avoid dermal contact
- Avoid contact of the eyes with diisocyanates
- Do no drink, eat or smoke at the working place
- Make sure that the working place is well ventilated
- Always wear the appropriate Personal Protective Equipment and keep it well maintained
- Train your local emergency protocols
- Keep your working place clean and tidy



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Sample slides of Training Level 2

Rigid PU Foam continuous Production Mapping of MDI induced health risks:

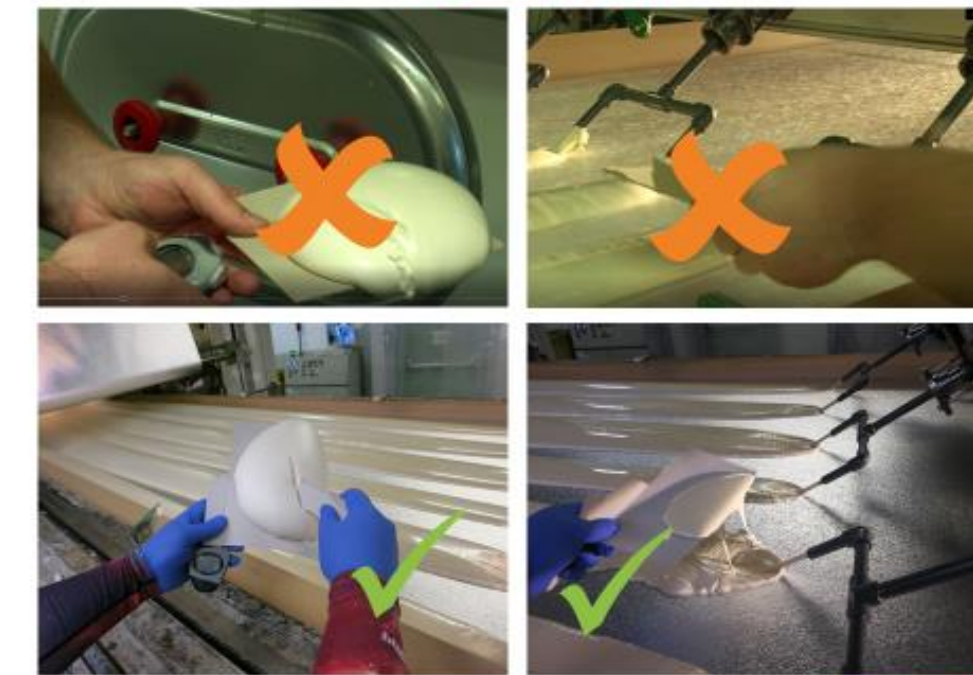


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Stable continuous foam production: Taking Foam Samples and replacing the tubes/pipes

- During the manufacturing of the insulation products, it is required to take samples of the foam from time to time to measure and/or check its properties for quality control or for process optimization.
- During this task nitrile gloves, safety glasses or face shield and clothing with long sleeves (or disposable sleeves) must be worn to protect you from dermal exposure.

PPE shall be worn!



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Stable continuous foam production: Taking Foam Samples and replacing the tubes/pipes

- It is also necessary to replace tubes/pipes between production batches
- During this task nitrile gloves, safety glasses or face shield and clothing with long sleeves (or disposable sleeves) must be worn to protect you from dermal exposure.

PPE shall be worn!



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(c) ISOPA / ALIPA

MDI filter cleaning operations - from main bulk tank to intermediary tanks and piping

Medium inhalation and medium dermal risk

- Sources of risk:** dermal contact with noticeable quantity of MDI via spills/splashes and inhalation of MDI during the venting of the pumps. Most of the MDI waste (liquid) generated on a rigid PU foam plant (>90%) is coming from those filter cleaning operations.
- Those tasks are normally carried out on routinely, but might also be needed on an unscheduled basis if the quality of the MDI delivered in bulk put the foam production at stake.
- Operator shall be trained to the cleaning of the several liquid MDI filters on the feed line (or receive proper supervision) – care must be applied to slowly open filter valves to avoid backsplashes. They shall also be trained on the venting of the MDI pumps.

Recommendations:

- PPE shall be worn: safety boots, high visibility jacket, safety glasses, long sleeves clothing and nitrile gloves, face mask with filter, and the area shall be well ventilated.
- The container to be used for this operation shall only be dedicated to such operation, have no residue from other substances (polyols, water...) and could ideally be closed (closed containers of small capacity are preferred over buckets for instance).
- Company procedure based on risk assessment methodology shall be followed for this task, including the disposal of the generated MDI Waste (liquid and/or unreacted formulations) (see the waste section).



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Sample slides of Training Level 3

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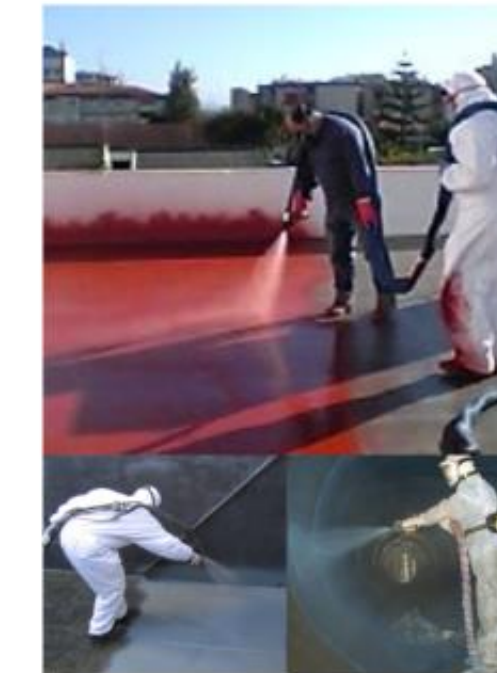
Spraying outside a spray booth



Training Level 2 - General Content (c) ISOPA / ALIPA

Diisocyanate exposure potential

- Why are tasks involving spraying diisocyanates of high risk?
 - Spraying can produce very high exposure to diisocyanates
 - In aerosol form much higher levels can be present in the air
 - You can easily breathe the aerosol mist droplets
 - More chemicals are used in a shorter time frame
 - Anyone near this work will be at risk
- Important
 - To keep all non-essential people away from the work area until the risk has been minimized
 - Take into account wind speed and direction, this can cause spray to drift large distances



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Engineering Controls

Spraying in an enclosed area (attics and crawl spaces, or tanks linings), requires local exhaust ventilation (LEV) during and after spraying



- It should be ensured that:
- spray mist does not leak out
 - extracted air is discharged to a safe place
 - suitable precautions are taken after spraying until the area has cleared, this can take a long time



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Polyurea Chemicals exposure potential

- While processing Polyurea, exposures to chemicals could be
 - before application**, when chemicals and equipment is preparing, heating and recirculating
 - during application**, aerosols and gasses can emit, and when change empty to new drums
 - after application**, when cleaning the spray gun
- Inside the truck or van, often there is generators and compressors which generates additional heat
- this could lead to exposure to warm/hot chemical vapors



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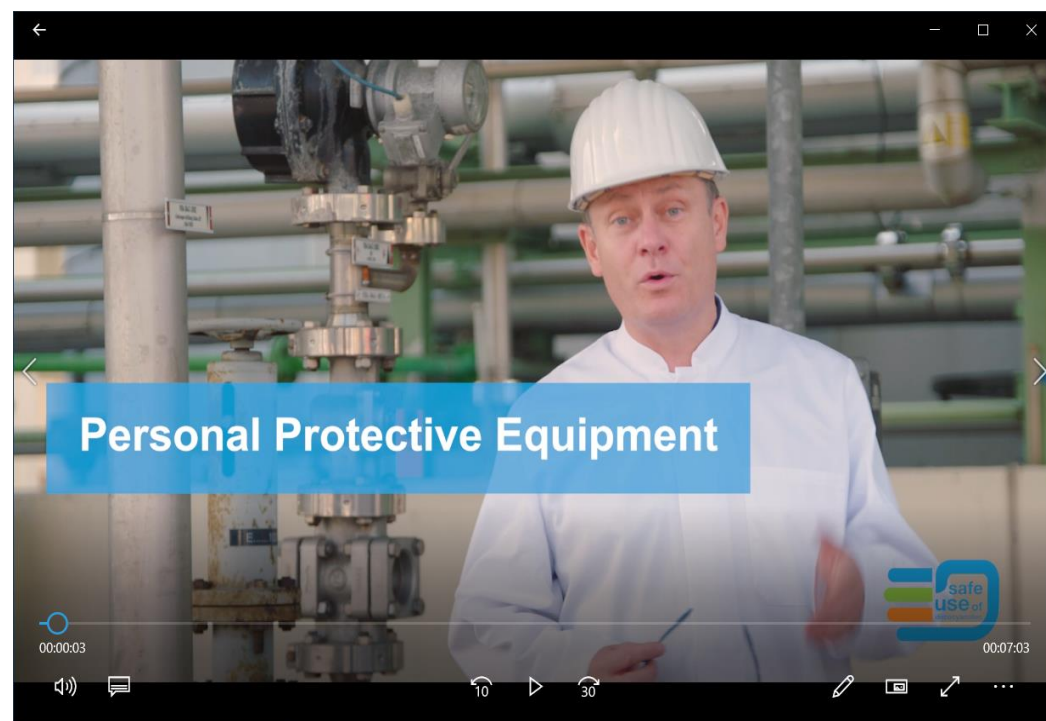
Video`s



Sensitization 05:00



First Aid 05:30



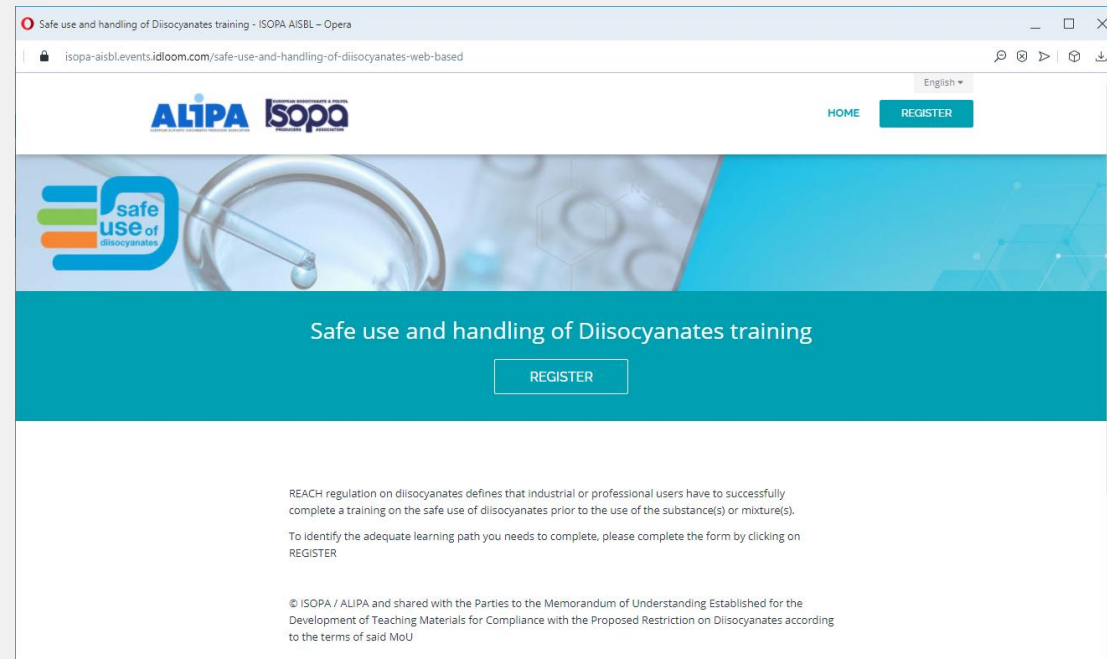
PPE 05:30



Conduct a training

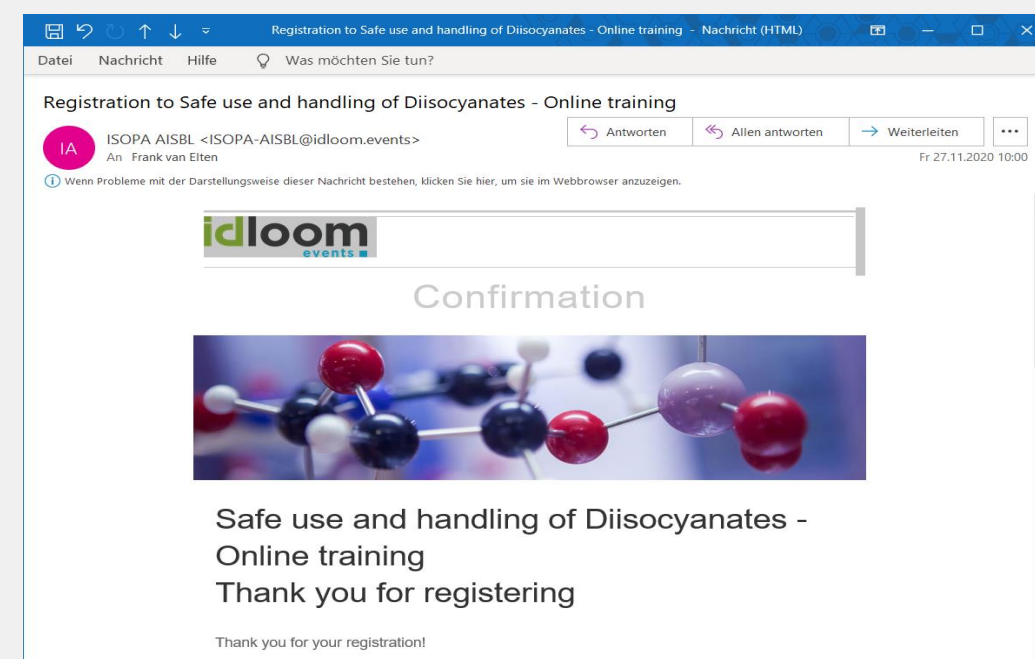
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Booking a training



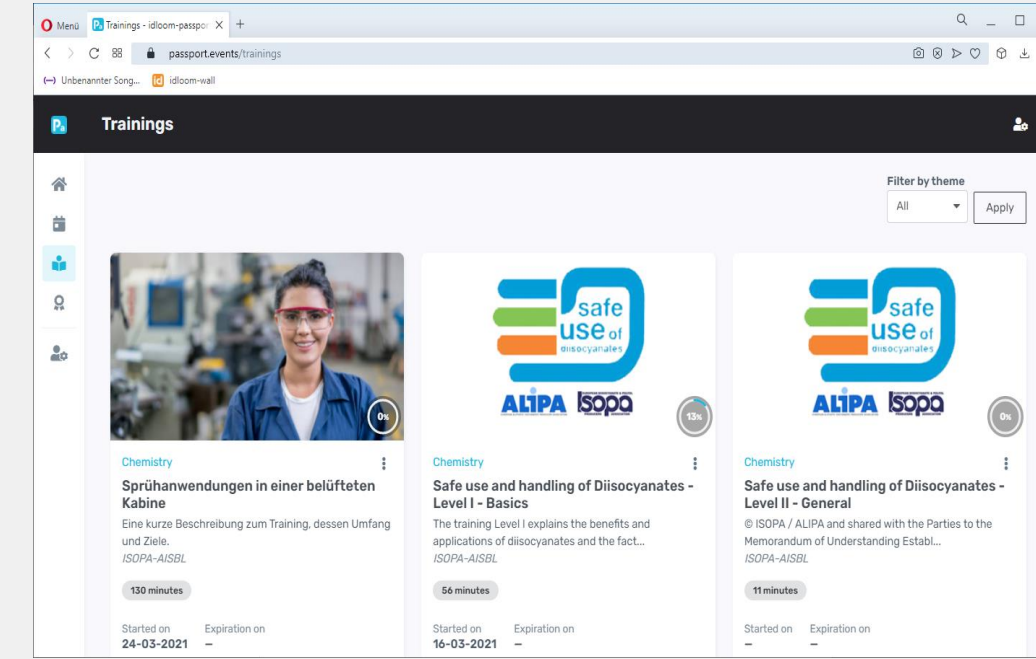
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Registration Email



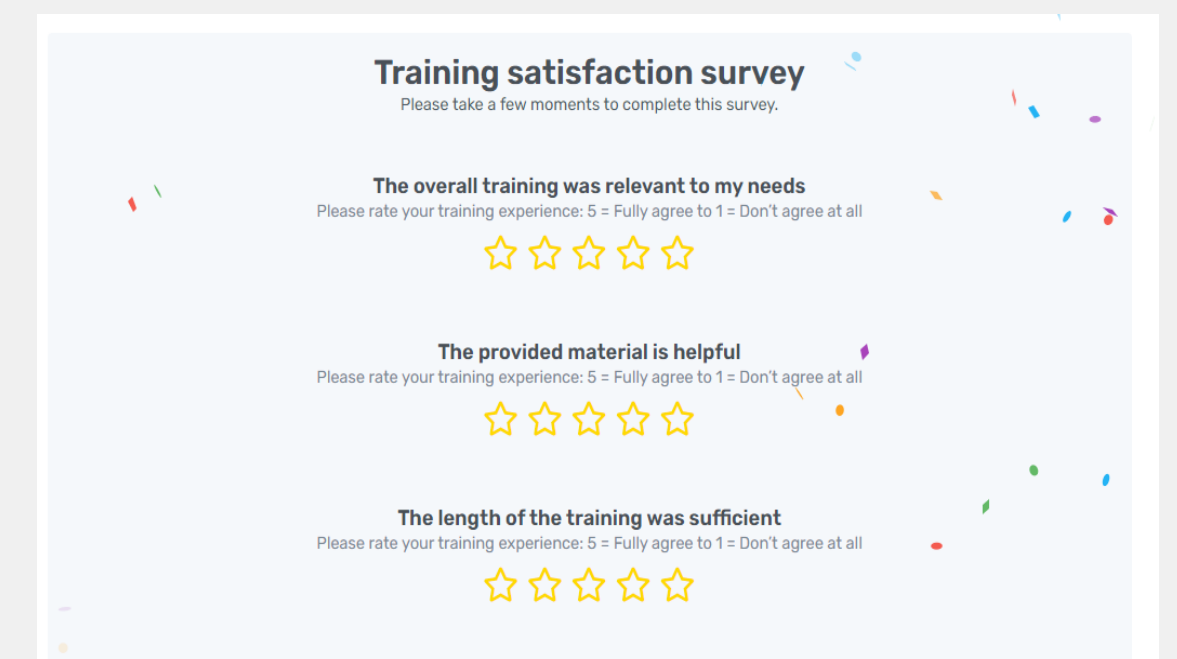
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Taking a course



4

Feedback



The different steps

Documentation of the training

The Certificate



Validation of the Training Material

Dual Approach

German Berufsgenossenschaften

 **BG BAU**

 **BG RCI**

 **BG HM**

 **BG ETEM**

TÜV Rheinland



Proof against TRGS 430
and
BR RCI Guide on Diisocyanates

ISOPA / ALIPA partners with IDLOOM



The company

Idloom SA is a corporate communications' software company, providing software solutions and services to a broad range of international companies and organizations.

- Founded 2015 in Brussels
- Offices in EU, USA, UAE
- 2000+ active customers
- 4500+ current live events

Key differentiators

World's most user-friendly event management software (Gartner, 2018)

5* customer support (Capterra)

Endless integrations with third party softwares

Client references

CEFIC, PlasticsEurope, TIC Council, FEICA, FIEC, FECC, ACA, ASAE, VinylPlus, ACIL, EBAA, CTU, ...

BMW Group, Boeing, Strabag, Engie, E&Y, Genetec, Audi, Ingenico, IBM, ...

Education

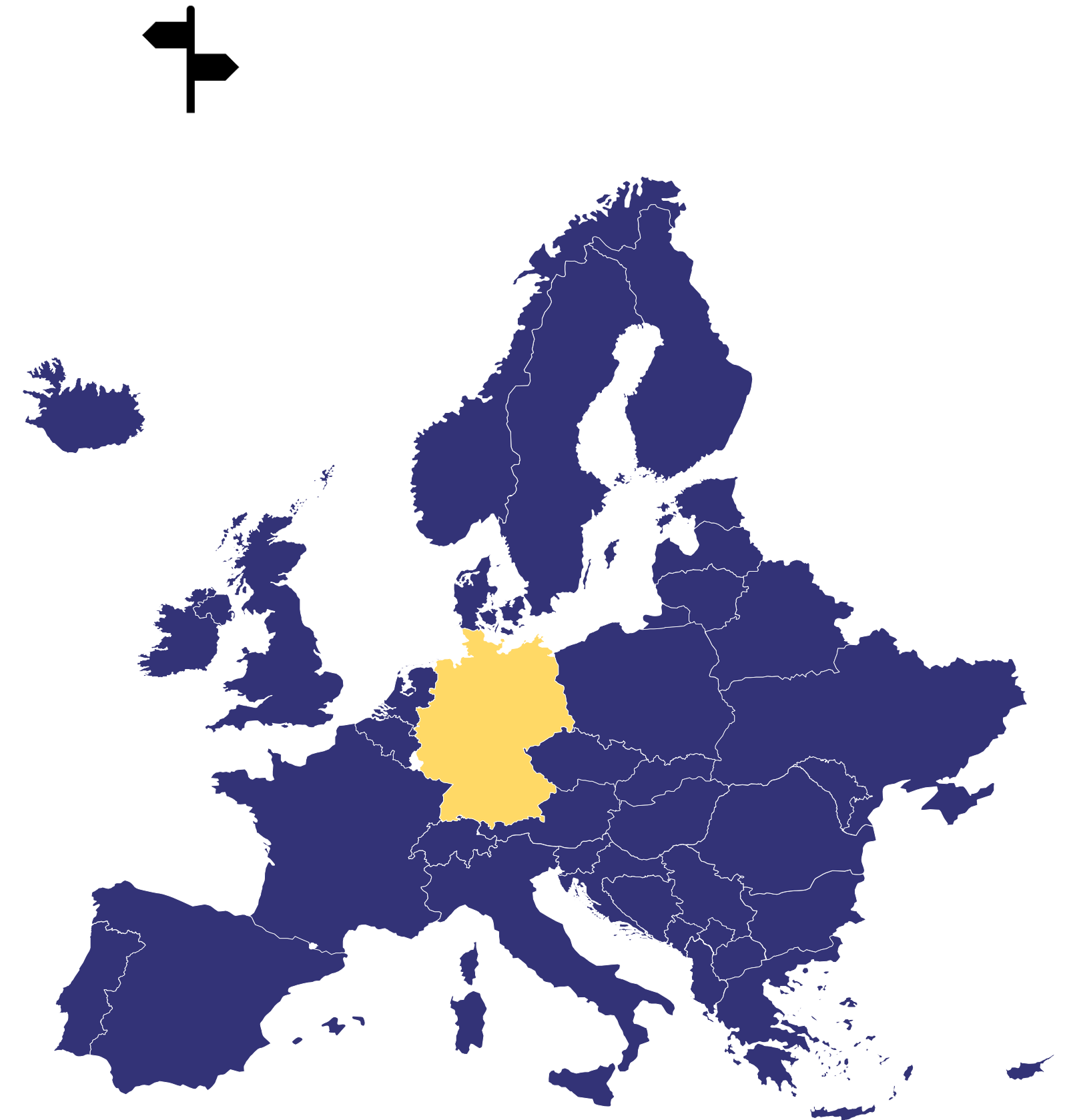
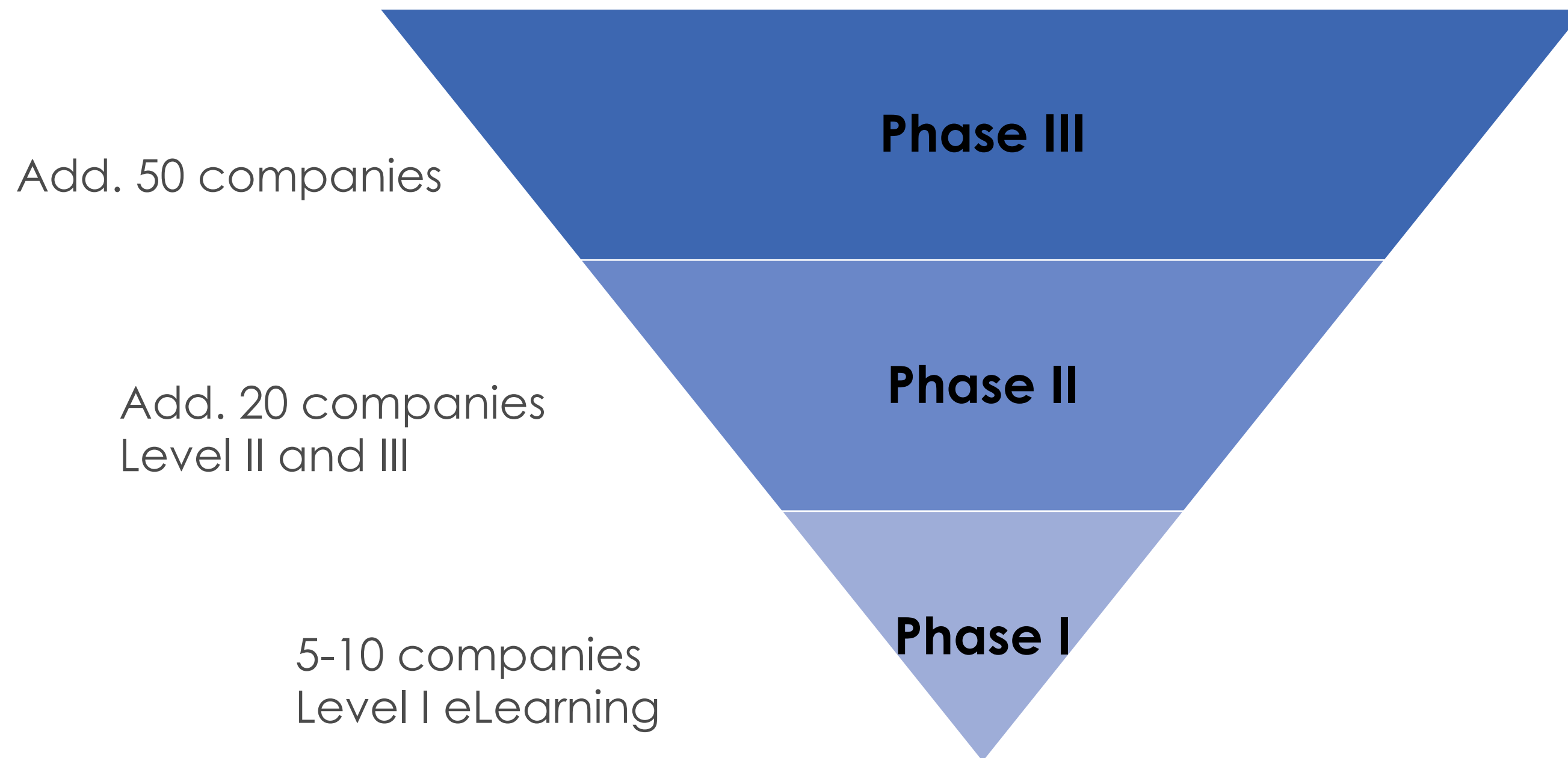
Houston Community College, HEC, University of Delaware, UCL, Stellenbosch University,...

Governmental:

National Bank of Belgium....

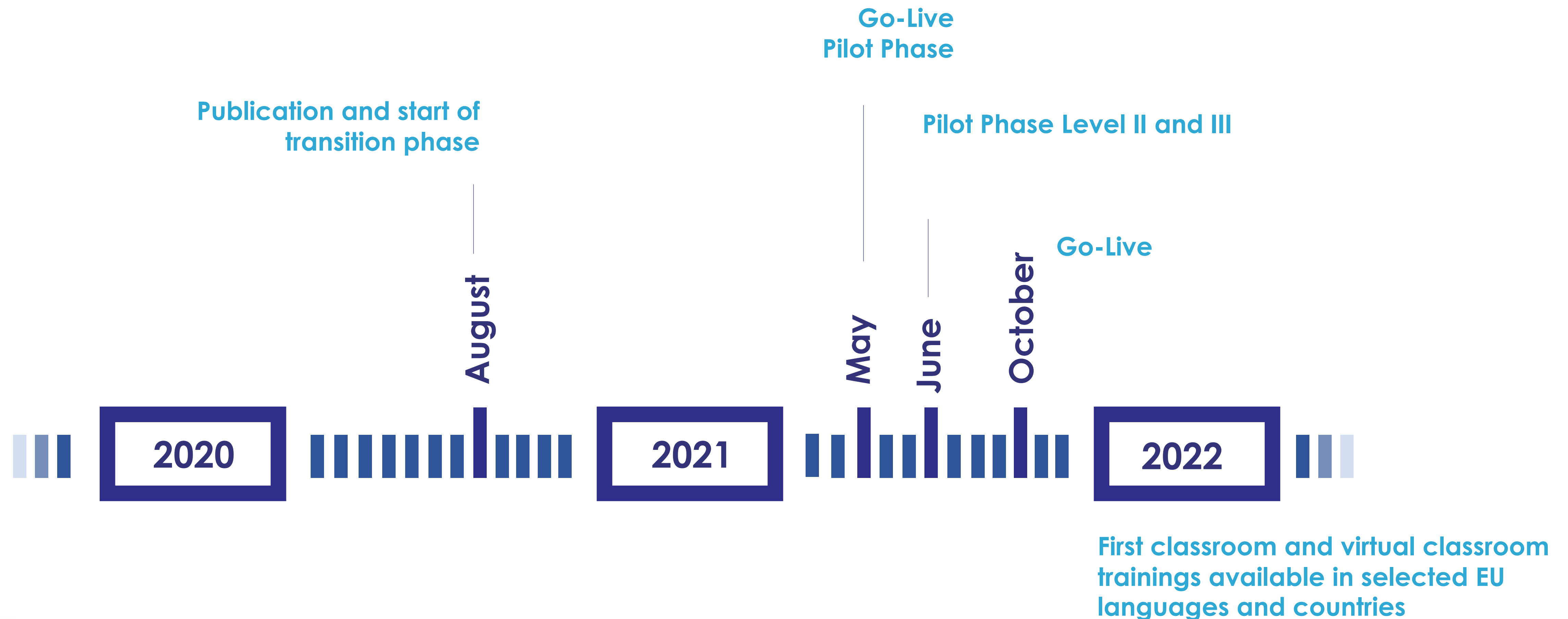
Pilot Phase

- Country Germany
- Start projected for **May 2021**
- Cover of industrial & professional uses



Timeline

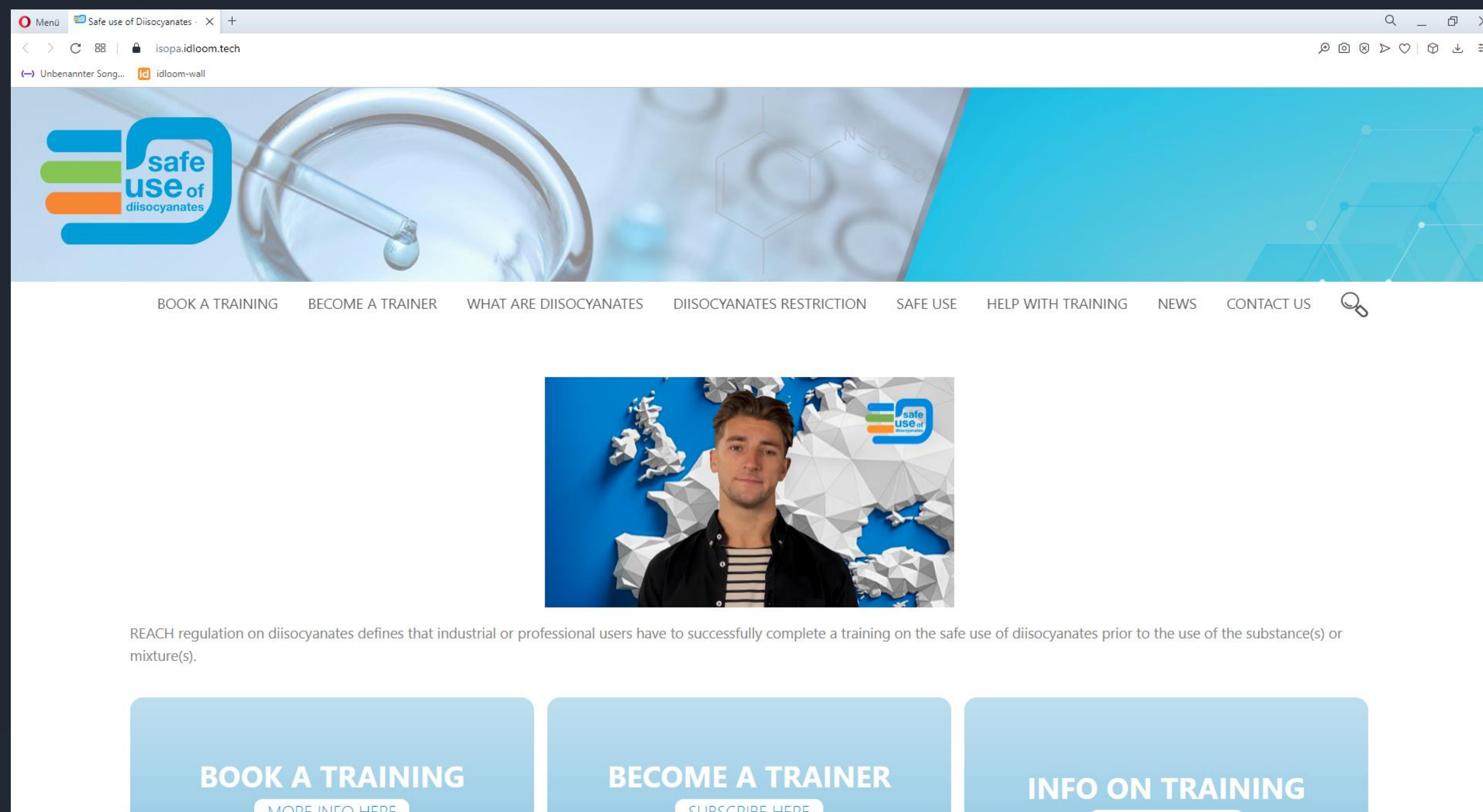
Indicative timeline for roll-out of training



Communication

- Find the key information you need

- www.safeusediisocyanates.eu
- www.isopa.org
- www.polyurethanes.org



Training on Diisocyanates and Occupational Exposure Value

ISOPA, ALIPA and Downstream Associations covering the Polyurethane industry, strongly support the REACH restriction on diisocyanates as the best risk management measure (according to RAC) to reduce worker exposure to diisocyanates.

The restriction will be complementary to OSH provisions and help reduce exposure levels.

Occupational Exposure Values should consider the contribution of mandatory training.

Questions & Answers

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