Get a flavor from local REACH work and meetings at national level

BRENNTAG

ENES 8 2015

Exposure Scenarios - REACH compliance check for Downstream users

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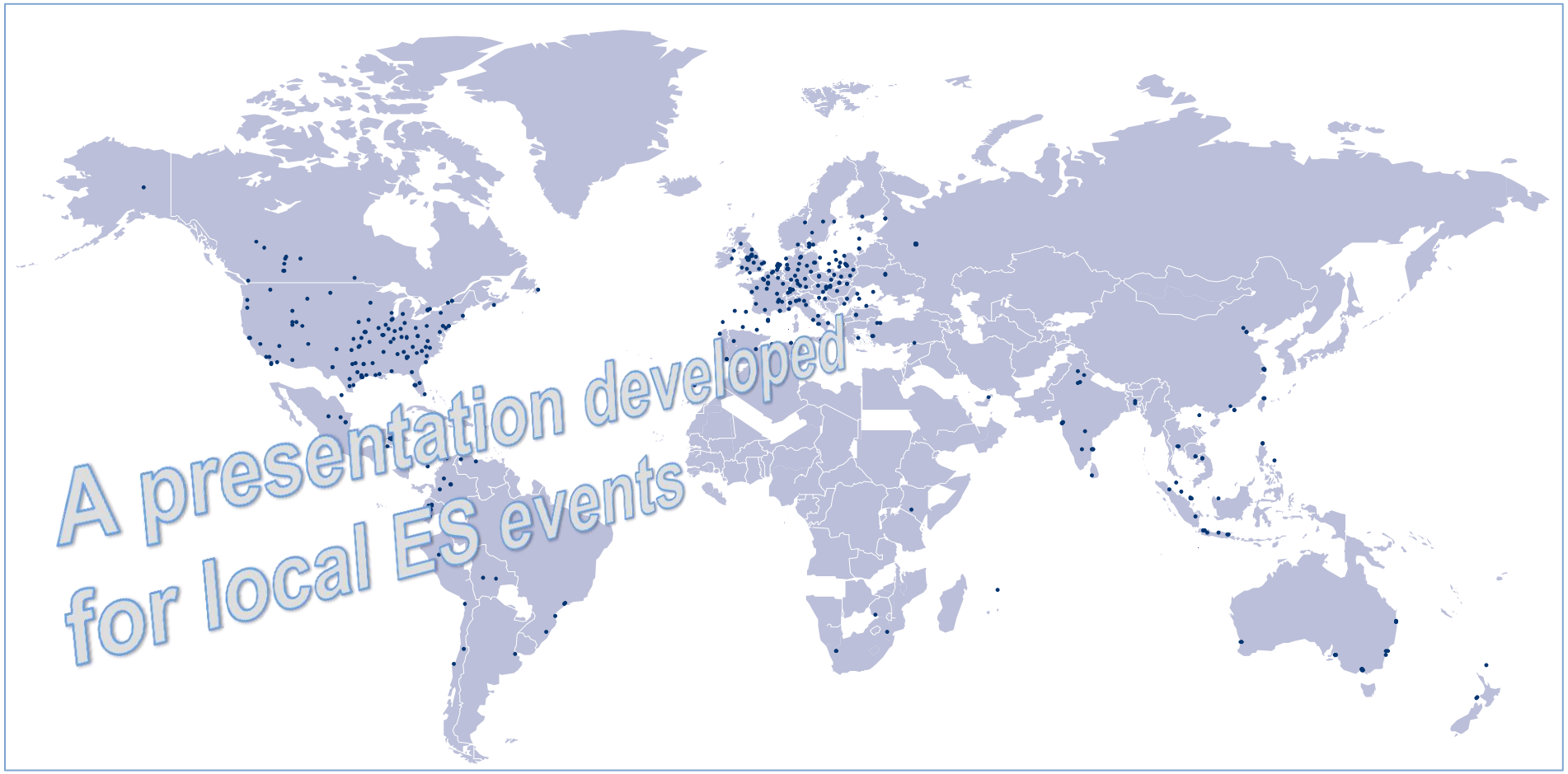
BRENNTAG WORLD

With over 450 locations worldwide, Brenntag is truly a global distributor



BUSINESS MODEL

Chemical distributor in the supply chain (member of Fecc)

Chemical Manu-facturer | Purchase | Transport | Storage | **Filling Packaging Labelling** | **Mixing Blending Formulating** | Extensive Technical Support | Vendor-Managed Inventory | Bundling Transport | **Chemical Down stream user**

- Linking chemical manufacturers with chemical users
- Various REACH roles depending on the specific activity. In scope for this presentation :
  - Repackaging from large into smaller quantities (**Downstream user**)
  - Filling, packaging & labeling (**Downstream user**)
  - Formulating according to customer specific requirements (**Downstream user**)

INTRODUCTION

DU and Exposure Scenarios (ES) - *a few main points*

- **DU obligation:** Check if **uses and conditions of use** are **in line with ES received.** Formulators have to consider foreseeable use by customers.

- Supplier's ES describes how the exposure of humans and the environment to the substance can be controlled in order to ensure its safe use *(information from the chemical safety assessment prepared for registration)*.

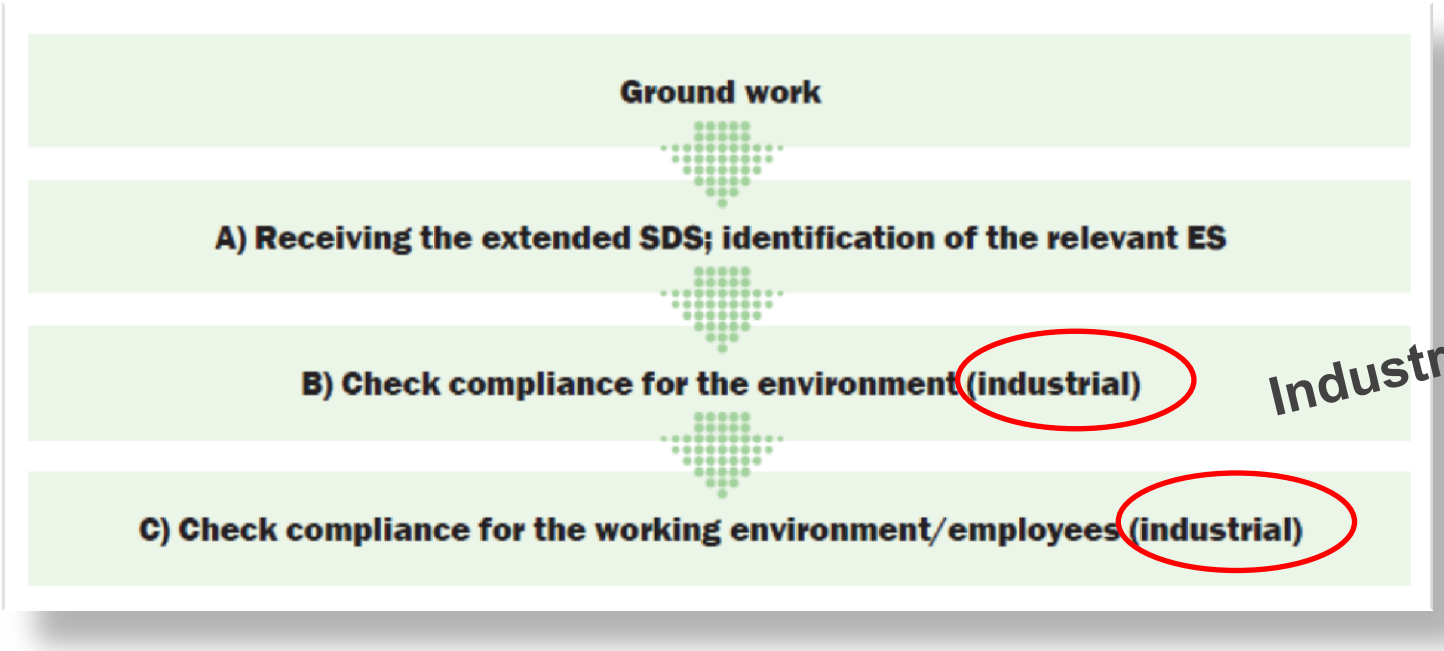
- No ES format defined in REACH, guidin[illegible] exis[illegible] produce exposure scenarios from d[illegible]ent sup[illegible]ers va[illegible] from [illegible] the NB! National la[illegible]gu[illegible]equired.

Get a flavor...

- Recommended format of the ES includes 4 sections
  1. Title section
  2. Conditions of use affection the exposure (OC /RMM)
  3. Exposure estimation
  4. Guidance to DUs to evaluate if their use is within the boundaries of the ES

COMPLIANCE CHECK

ES in extended SDS may carry complex information. Challenging to check if own uses and conditions of use are in line with ES received



Industrial view

Three main points together with some groundwork may facilitate the check that uses and conditions of use are covered.

Get a flavor … see the brochure

GET READY FOR COMPLIANCE CHECK

Groundwork

Outline the groundwork – create an overview:

1. Start from the table developed by FECC (The European Association of Chemical Distributors) according to ECHA's Use descriptor System for the core activities of chemical distributors. Map your own uses and working processes (PROCs) with this as a basis.
2. Create an overview of your operational conditions and risk management measures.
3. Identify the key persons and train the staff that will be responsible for carrying out the compliance checks.

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GROUNDWORK

Use descriptor mapping for Brenntag based on use mapping table from our sector organisation Fecc (subset)

Main User Group	ERC	PROC		AC/PC	Supplementary sector
SU3	ERC 2	PROC 1	Closed storage	-	SU10
		PROC 2	Closed continous process	-	
		PROC3	Closed batch	-	
		PROC5	Batch with opportunity for exposure	-	
		PROC8a	Transfer at non-dedicated facility, maintenance and cleaning	-	
		PROC8b	Transfer at dedicated facility	-	
		PROC 9	Dedicated filling	-	
		PROC 15	Laboratory activity Q/ID-test	-	

Brenntag ’s current use descriptor mapping

Get a flavor ....

GROUNDWORK - Process Flow Examples - and currently added PROCs

1)

PROC1

<Customer>

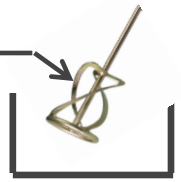
Get a flavor ...

2)

PROC1

PROC8b

PROC3/5



PROC8b

PROC9

PROC15

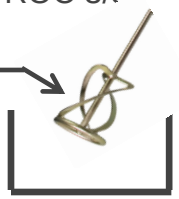
LAB

3)

PROC1

PROC8b

PROC 3/5



PROC8b

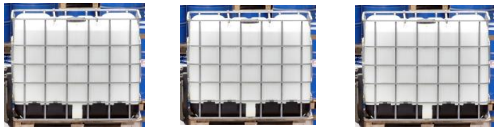
PROC9

PROC15

LAB

4)

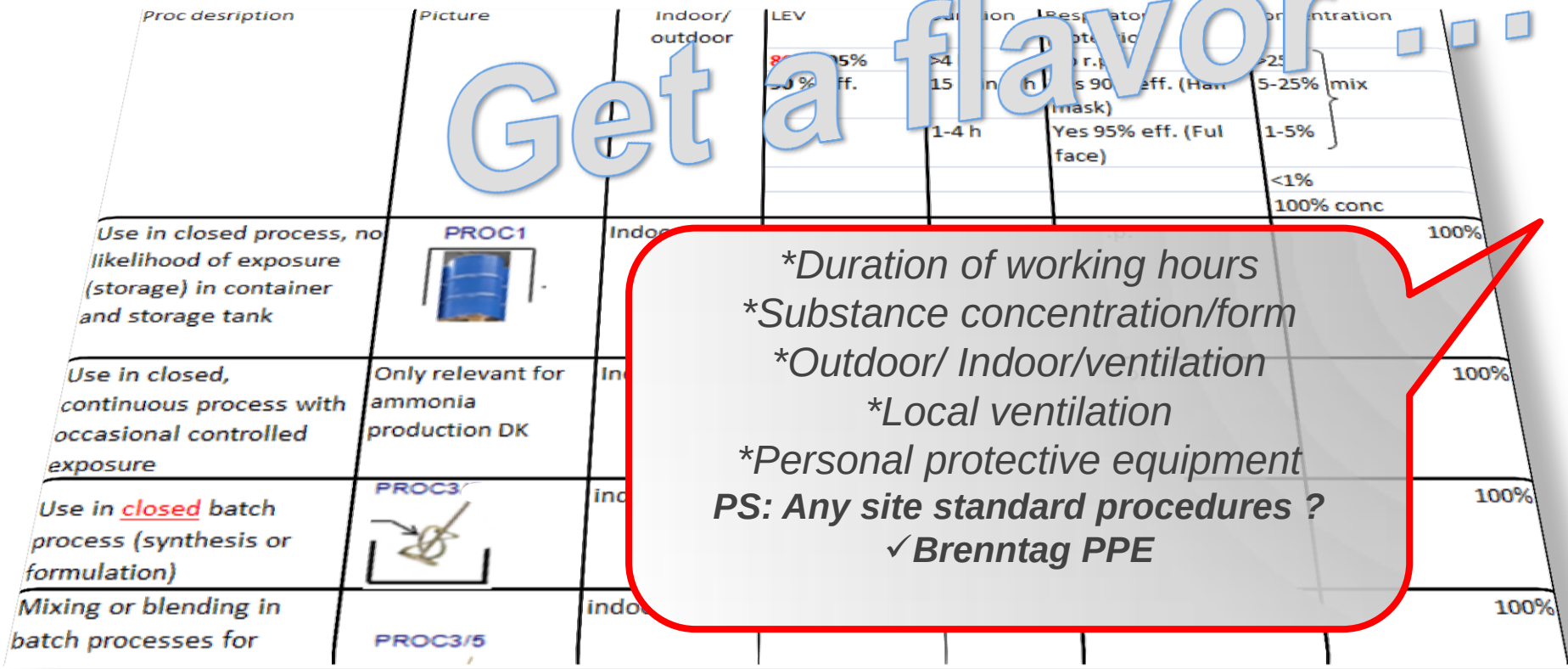
PROC8b



PROC1

GROUNDWORK

Helpful to create an overview of operational conditions and risk management measures (as example from the parameters in the tool ECETOC TRA*)



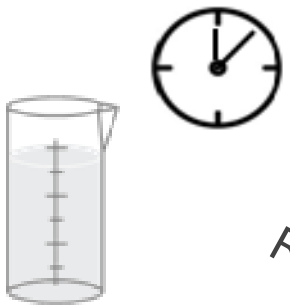
*ECETOC TRA - exposure estimation tool - http://www.ecetoc.org/tra

ECETOC-TRA PRINCIPLES IN BRIEF (Worker)

Estimates the working environment exposure for processes (PROC)

Initial process exposure x Rf_{LEV} x Rf_{Con} x Rf_{Dur} x Rf_{RPE} x … = **Final safe exposure**

Rf= 0,2



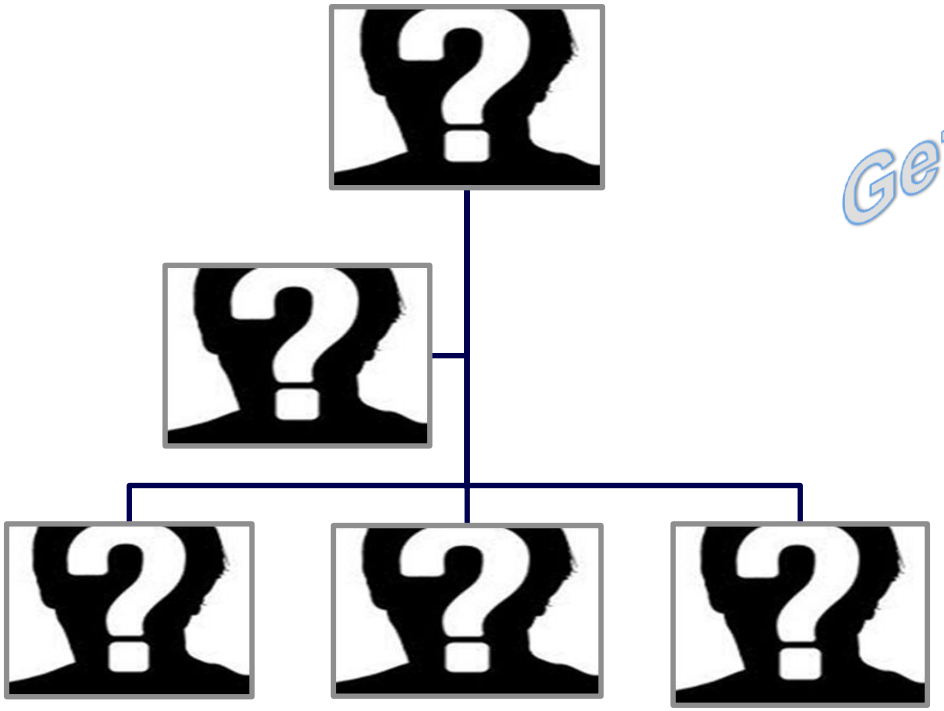
Rf= 0,1

Rf= 0,7

Get a flavor ….

GROUNDWORK

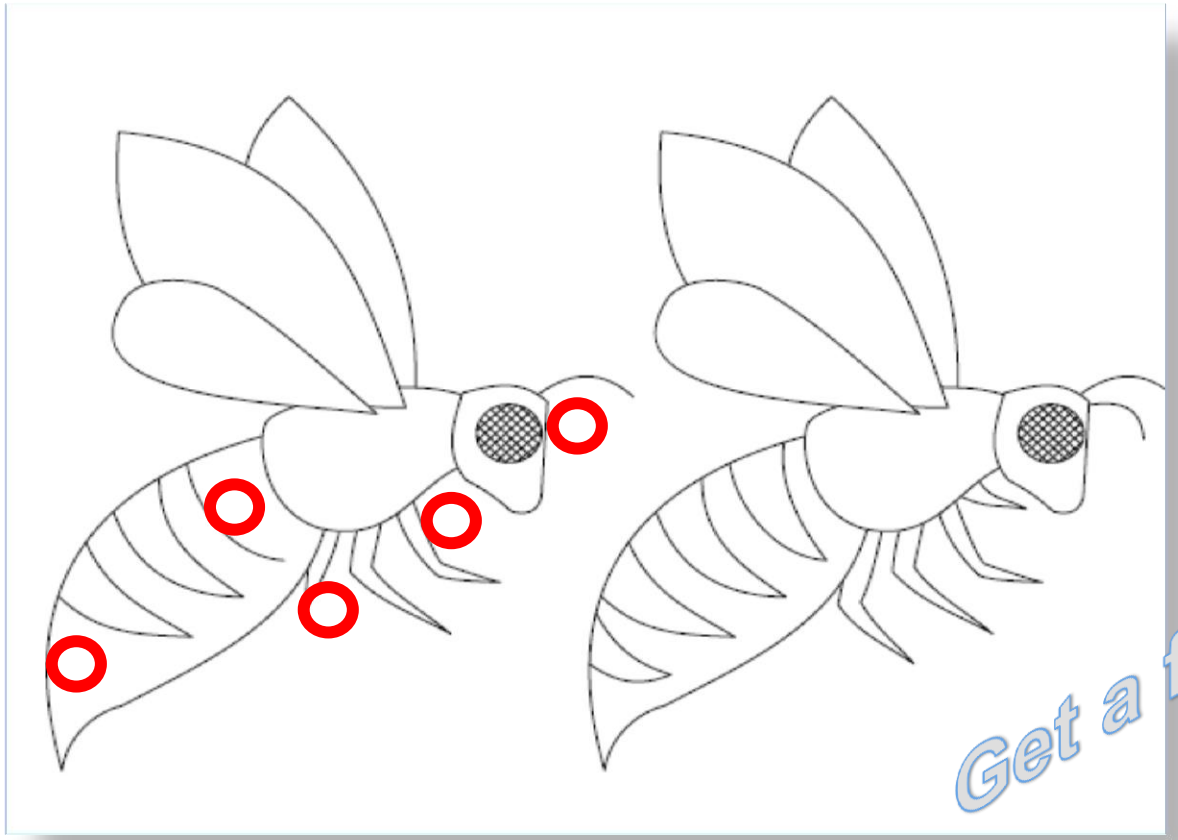
Who – When – Where – What ?



Get a flavor ....

Identify the key persons and train the staff that will be responsible for carrying out the compliance check

ES COMPLIANCE CHECK



Own uses + Conditions of use match ES ???

CHECK USES

Get a flavor ....

Relevant ES

After having received a safety data sheet and attached exposure scenarios

A. Identify the relevant ES

a. At first, select the ES that covers your own uses based on information in the ES title sections and in the ES overview table (Evt. SDS section 1.2)

1. Exposure scenario	
Title	Mixing, preparation and repackaging of substance.
Sector of use	SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU 10 - Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process category	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a - Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b - Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Product category	
Article category	
Environmental release category	ERC2 - Formulation of preparations
Processes, tasks, activities covered	

PROC 15 missing ?

Brenntag Nordic: Industrial user formulating according to customer requirements

CHECK USES

Get a flavor ....

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a. At first, select the ES that covers your own uses based on information in the ES title sections and in the ES overview table (Evt. SDS section 1.2)

Exposure scenario 12 **Use of substance as laboratory chemicals.**

1. Exposure scenario	
Title	Use of substance as laboratory chemicals.

PROC 15 missing ? No, just included in a seperate ES (still industrial use). Relevant use /process may be identified in one or more of the ES.

CHECK CONDITIONS OF USE

Environment

After having received a safety data sheet and the attached exposure scenarios

B. Check compliance for the environment

b. Focus on compliance for the amounts used and, if efficient, risk management measures for the environment are implemented as stipulated in the ES (ref. conclusions from ENES2). Otherwise, if the used amounts are higher or the risk management measures are different (less efficient) it may also be needed to focus on the other parameters for the environment, in which case scaling or a Downstream user assessment may become relevant. The amount used links with exposure and has as such no impact on storage in closed containers only.

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CHECK CONDITIONS OF USE

Get a flavor ...

9.3.1.3 Control of environmental exposure

Product characteristics	Physical state		liquid
Concentration of substance in product		Up to 100 %	
Amounts used	Daily at point source		n.a.
Annually at point source		280,000 t/year (maximum at point source in worst case)	
Frequency and duration of use	Patter		Continuous 300 days per year
Environment factors not influenced by risk management	Flow r		18,000 m3/day (default)
Other given operational conditions affecting environmental exposure	Proce		Indoor
Processing temperature		Ambient	
Processing pressure		Ambient	
Technical conditions and measures at process level (source) to prevent release		Keep containers tightly closed. Store in a bounded area. Do not discharge into sewers or drains. Waste product and empty containers should be disposed of as hazardous waste in accordance with all local and national regulations. Formulation activity is assumed to be a predominantly enclosed process.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Apply technical measures aiming at reduction and cleaning of waste water (WWTP/local STP (e.g. biological treatm		Efficacy >90%
Organizational measures to prevent/limit release from site	Do not enviro		e into municipal STP.
Conditions and measures related to municipal sewage treatment plant	Size of		
Degradation efficacy			
Sludge treatment		Disposal or recovery	
Conditions and measures related to treatment of waste		Hazardous waste incineration or dispose for use in recycled fuels	

OK ?
280,000 t/year

OK ? Apply technical measures aiming at reduction and cleaning of waiste water (WWTP/local STP) Efficacy >90 %

CHECK CONDITIONS OF USE

Worker

After having received a safety data sheet and attached exposure scenarios

C. Check compliance for employees
   c. Check for the individual processes at the workplace (PROCs) if the following standard parameters are defined and as a minimum are complied with:
      i. Duration of working hours
      ii. Substance concentration/- form/- dust/- vapour pressure
      iii. Outdoor/indoor activity & ventilation
      iv. Local ventilation
      v. Personal protective equipment

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CHECK CONDITIONS OF USE

Get a flavor ...

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	ammonium chloride Content: >= 0 % - <= 100 %
Physical state	Solid – medium dustiness
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposed skin area	Palm of both hands (480 cm^2)
Risk Management Measures	
Use suitable eye protection.	

OK ?

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CHECK CONDITIONS OF USE

Get a flavor ...

Product characteristic (including package design affecting exposure)	Physical state	liquid
	Concentration of substance in product	Up to 100 %
	Vapour pressure of substance	5,73 kPa
Amounts used	n.a. in tier1 TRA model	
Frequency and duration of use/exposure	Frequency of exposure (weekly)	> 4 Days/week
	Frequency of exposure (annual)	240 Days/year
	Duration of exposure	> 4 Hours/day
Human factors not influenced by risk management	Potentially exposed body parts	Two hands face side only (automated processes/PROC3) Two hands (transfer, filling, etc./PROC8a,b)
	Exposed skin surface	480 cm^2 (automated processes/PROC3) 960 cm^2 (transfer, filling, etc./PROC8a,b)
Other given operational conditions affecting workers exposure	Assumes a good basic standard of occupational hygiene is implemented.	
	Setting (indoor/outdoor)	Indoors
Technical conditions and measures at process level (source) to prevent release	No specific measures identified.	
Technical conditions and measures to control dispersion from source towards the worker	Ensure material transfers are under containment or extract ventilation. Provide good ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).	
Organisational measures to prevent /limit releases, dispersion and exposure	No specific measures identified.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374 during the activities where excessive skin contact is possible. PPE: Eye Protection – suitable eye protection should be worn when handling product if there is a risk of splashing .	

OK ?

CHECK USES AND CONDITIONS OF USE

Documentation of check - Example

Attach received eSDS/Exposure Scenarios here:

01-2119474209-33_EXXSOL HEXANE_extSDS_2013-10_EXXON_DA.pdf

eSDS Version: **03-10-2013** Reception date: **03-10-2013**

Vendor name	Vendor material name
EXXON	**EXXSOL HEXANE**
Brenntag material number	Brenntag material name
297600	**EXXSOL HEXANE**

REACH Registrering number	INDEX number	CAS number	EINECS number
01-2119474209-33			**925-292-5**

Locations, identify storage and use

1. Search for plants created for the material (transaction MM03) and flag the list below

☑ DK01 Vejle	☐ FI03 Kemi	☐ SE02 Frövi
☐ DK02 Høsten	☐ FI04 Hamina	☐ SE03 Malmö
☐ DK04 Frederikssund	☐ FI05 Rauma	☐ SE05 Uddevalla hamn
☐ DK05 Prøvestenen	☐ FI98 Finland	☐ SE06 Malmö (T)
☐ DK06 Kalundborg	☐ FI99 FI 3.P Plant	☐ SE07 Köping
☐ DK07 Sydkajen	☐ NO01 Norge Borgenhaugen	☐ SE08 Kalmar

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CHECK USES AND CONDITIONS OF USE

Documentation of check at Brenntag Nordic

Usage

2. Bulk material (Check material master data in transaction MM03)

(•) **Yes** ( ) **No**

2.1 Please mark the plant(s) where **handled as bulk**

☑ DK99 ☑ FI01 ☑ NO99

3. **Used as a component** in production? (Check if component in BOM in transaction ZRSR_WU_LIST)

( ) **Yes** (•) **No**

3.1 Please mark the plant(s) where **used as a component** in BOM

☐

General approvals

Global approval unopened packaging, own locations:
USE COVERED. EXPOSURE NOT LIKELY
Trading material received, stored and issued unopened

Responsible FI01 (?)		Send E-mail to FI01/02
Responsible NO02 (?)		Send E-mail to NO02

Log

Comments

Save comment

History:

Approved as Trade Material by: Veronika Karlsson, date 24-06-2014

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CHECK USES and CONDITIONS OF USE

Focus on REACH compliance check in this brochure

Industrial uses at Formulator stage in the supply chain

CHECK USES AND CONDITIONS OF USE

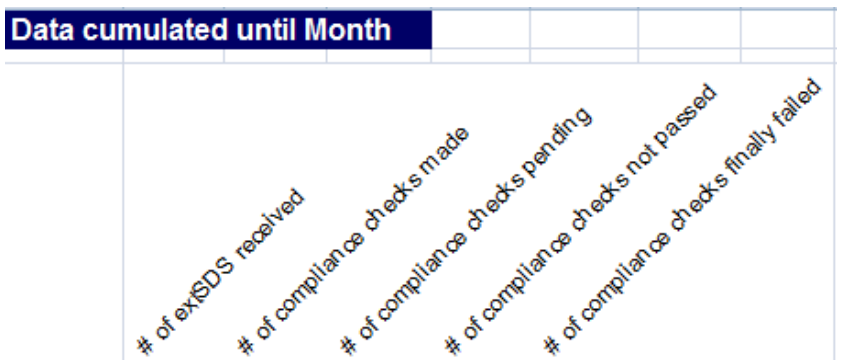
From Brenntag Nordic's experience (snapshot)

Get a flavor ...

Ca. 500 SDS extended with Exposure scenarios from suppliers
More than 900 checks performed
Around 70 checks currently pending
Focus points helps to make the checks workable
Checks triggered a.o.

- supplier dialogs in some cases
- evaluation of various details for exhaust ventilation (LEV)

Checks OK in many cases



CHECK USES AND CONDITIONS OF USE

From Brenntag Nordic's experience – Evaluation example

Get a flavor ...

BBS production area: Addition of solid powder via man hole in the top of the mixer							
SAP mat no	Name	CAS	Vendor	Ventilation requirement	LEV requirement	Comment	Final product
2319	Oxalic acid	205-634-3	X	-	LEV		6011 Bergoxal mix, sidst Nov. 2013

BBS production area: Addition of liquids via the buttom of the mixer							
SAP mat no	Name	CAS	Vendor	Ventilation requirement	LEV requirement	Comment	Final product
5849							
287200	Monoethanolamin	205-483-3	Y	-	Provide extract ventilation to points where emissions occur(PROC 5,8a,9,15).		Flere Scaletreat-varer

FF production area: Mixing process in an IBC							
SAP no	Name	CAS	Vendor	Ventilation requirement	LEV requirements	Comment	Final product
18642	Ethanol	200-578-6	ZZ	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).	Material transfers under containment or extract ventilation. Good ventilation to points where emissions occur.	Blandes direkte i IBC	

Status/ Solution & options		
Solution	Supplier of eq.	Budgetprice

SUMMARY AND FINDINGS

ES Compliance check

Challenges

- To recognize our industrial activities and processes in the terminology of the ES
- Check – uses and conditions of use covered? Timelimit
- To organize & implement the change in a changing env.

Actions

- Involve logistics in case cooperation with central E&Q
- Map our own sites
- Training sessions at a very practical level
- Define & implement procedure. Check. Document check

Gains

- Learning by doing works!
- Increased involvement in this new way contributed to the established awarenes about safety

Thank you