



Emissions from 2D3 Solvent & Product Use: Updated Guidance

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“Alcohol is a good solvent...”

1. Challenges
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1. Challenges

“... it dissolves marriages, families and careers.”

Solvent and product use

- One of the more difficult source sectors to estimate
- Many different types of source

2D3a	Domestic solvent use including fungicides
2D3b	Road paving with asphalt
2D3c	Asphalt roofing
2D3d	Coating applications
2D3e	Degreasing
2D3f	Dry cleaning
2D3g	Chemical products
2D3h	Printing
2D3i	Other solvent use
2G	Other product use



- Cosmetics and toiletries
- Household products
- Construction/DIY
- Car care products
- Pesticides

- Difficult to obtain reliable activity data
- Different reference information/estimates (Guidebook, ESIG, national estimates etc.)

2. Existing methodology and guidance

EMEP/EEA Guidebook

- **Tier 1:** A **per-capita** emission factor(western Europe, other countries)
- **Tier 2a:** Based on the amount of **solvent use**
- **Tier 2b:** Based on the use of **solvent-containing products**

- Challenges obtaining activity data, so...
- ... in general, countries either use a **very detailed methodology**
- ... or a **very simple T1 methodology**.

- A clear need for a “**more accessible**” **methodology** that is better than Tier 1 - improved **accuracy** & accounting for **EFs changing with time**.

3. Additional Guidance

EC Project – supporting inventory improvements in MS

- Project team working directly with MS inventory teams.
- Solvent and product use identified as **priority of improved guidance**
- Use information from the highly detailed inventories to create information that supports other countries (although some challenges still remain with activity data).



3. Additional Guidance

Content of the additional guidance

- Advice about **different approaches**, e.g. how ESIG data can be used in the inventory
- Much more **detailed EFs**
- Demonstration of how **EFs change with time**
- Some advice about how **activity data** can be collected or derived
- Headline information doesn't change much... but we now have ~20 pages of tables!



3. Additional Guidance

Content of the additional guidance

Table 4: UK emission factors for non-aerosol personal-care products

Product Group	Product Type	VOC content (%)	% VOC emitted	Emission factor (g/kg product)
AP/Deodorants	Roll-on	5%	100%	50
AP/Deodorants	Stick	25%	100%	250
AP/Deodorants	Pump (non-aerosol type)	75%	100%	750
Bath/Shower	Bath/Shower oil & gel	2%	5%	1
Beauty Aids: Eye	Eye makeup	1%	100%	10
Beauty Aids: Face/skin	Cleansers	5%	100%	50
Beauty Aids: Face/skin	Astringent / Toner	30%	100%	300
Beauty Aids: Face/skin	Foundation / Concealer	5%	100%	50
Beauty Aids: Lip	Lipstick / Lip Gloss	1%	100%	5
Beauty Aids: Nail	Nail polish remover	90%	100%	900
Beauty Aids: Nail	Nail polish	70%	100%	700
Beauty Aids: Nail	Nail treatments/strengthener	66%	100%	660
Creams	All types	1%	100%	10
Fragrances	Fine	85%	100%	850
Fragrances	Mass market	70%	100%	700
Hair Care	Styling aids	48%	100%	475
Hair Care	Conditioners, colouring & treatments	1%	100%	10
Hair Care	Shampoo	1%	5%	0.5
Oral Care	Mouthwash	20%	5%	10
Oral Care	Toothpaste	1%	100%	10
Oral Care	Denture fixatives	2%	100%	20
Powders	All types	4%	100%	35
Soaps	All types	3%	5%	1.5
Sun Care	Sun-protection, after-sun & self-tanning	4%	100%	40

3. Additional Guidance

Content of the additional guidance

Table 15: Solvent use and EFs in paint manufacture

Year	Activity data	Emissions	Emission factor
	Mg of solvent	Mg VOC	g VOC / Mg solvent
1990	214 343	9397	43 841
2000	232 474	8 138	35 006
2010	147 047	2 054	13 970
2019	111 407	1 464	13 139

French data - IIR 2021

Closing Comments

Additional guidance on the EMEP/EEA Guidebook web pages

- A very big improvement on the T1 approach
- More information on:
 - Different approaches
 - Detailed EFs
 - EF changes with time
- But... countries will still need to collect/derive activity data

