2.A.3 - Glass Production 1/3

# 2.A.3 - Glass Production

## **Short description**

Category Code Method			nod		AD			EF							
2.A.3		T2				AS				CS					
Key Category	SO <sub>2</sub>	NOx	ΝНз	NMVOC	СО	ВС	Pb	Hg	Cd	Diox	PAH	нсв	TSP	PM <sub>10</sub>	PM <sub>2</sub> 5
2.A.3	L/-	-/-	-/-	-/-	-	-	-/-	-	-/-	-	-	-	-/-	-/-	-/-

T = key source by Trend L = key source by Level

Methods							
D	Default						
RA	Reference Approach						
T1	Tier 1 / Simple Methodology *						
T2	Tier 2*						
Т3	Tier 3 / Detailed Methodology *						
С	CORINAIR						
CS	Country Specific						
M	Model						

\* as described in the EMEP/CORINAIR Emission Inventory Guidebook - 2007, in the group specific chapters.

ΑD	- Data Source for Activity Data
NS	National Statistics
RS	Regional Statistics
IS	International Statistics
PS	Plant Specific data
AS	Associations, business organisations
0	specific questionnaires, surveys

EF	- Emission Factors
D	Default (EMEP Guidebook)
С	Confidential
CS	Country Specific
PS	Plant Specific data

Germany's glass industry produces a wide range of different glass types that differ in their chemical composition. Germany's glass sector comprises the following sub-sectors: container glass, flat glass, domestic glass, special glass and mineral fibres (glass and stone wool). The largest production quantities are found in the sectors of container glass and flat glass. Further processing and treatment of glass and glass objects are not considered.

## Methodology

The emissions are calculated via a higher Tier method resembling a Tier 2 method, as the activity rates are tied to specific emission factors for different glass types.

#### **Activity data**

The production figures are taken from the regularly appearing annual reports of the Federal Association of the German Glass Industry (Bundesverband Glasindustrie; BV Glas). "Production" refers to the amount of glass produced, which is considered to be equivalent to the amount of glass melted down.

#### **Emission factors**

2.A.3 - Glass Production 2/3

The procedure used to determine emission factors for the various glass types involved and the pertinent emissions is described in detail in reports of two research projects (2008: Report-No. 001264<sup>1)</sup>, 2021: Texte 45/2021<sup>2)</sup>). The emission factors were calculated for the various industry sectors. The factors vary over time in keeping with industry monitoring, not only as steady trends, but falling in most cases. The most recently EF are for different glass types the following:

Table 1: Overview of most recently applied emission factors

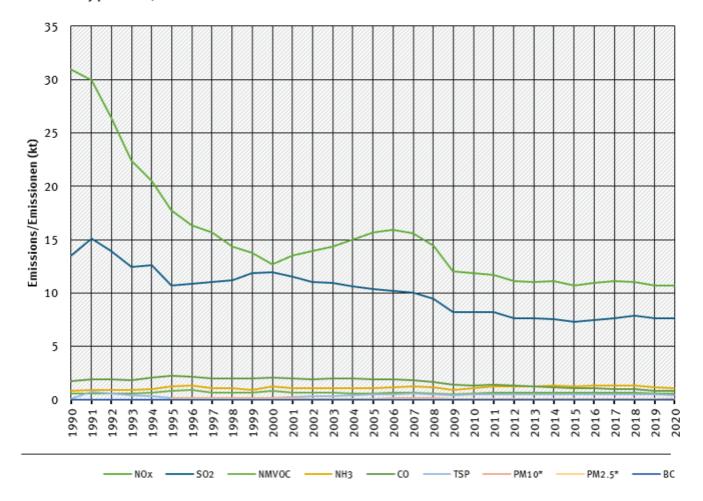
Pollutant	Unit	Container glass	flat glass	domestic glass	special glass	glass wool	stone wool
NO <sub>x</sub>							

#### Trends in emissions

Trends in emissions correspond to trends of emission factors and of production development. The resulting trends are not constant, as a result of different EF for various glass types. So emissions of SO<sub>2</sub> couldn't decrease due to increased production Level of a relevant product.

### trends of emissions of glass industry

Emissions by pollutant / Emissionen nach Schadstoff



<sup>\*</sup> Base Year for PM = 1995 / Basisjahr für Feinstäube (PM) ist 1995

2.A.3 - Glass Production 3/3

### **Recalculations**

Recalculations were necessary due to updated emission factors for all years.



For pollutant-specific information on recalculated emission estimates for Base Year and 2018, please see the pollutant specific recalculation tables following chapter 8.1 - Recalculations.

## **Planned improvements**

No further improvements are planned.

<sup>1)</sup> UFoPlan FKZ 206 42 300/02: Teilvorhaben 02: "Providing up-to-date emission data for the glass and mineral fiber industry" downloading via search "UBA-FB 001264" in (https://doku.uba.de  $\Rightarrow$  OPAC  $\Rightarrow$  use parameter 'Signatur'

 $https://www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/2021-03-18\_texte\_45-2021\_luftschadstoff\_glasindustrie.pdf$ 

<sup>&</sup>lt;sup>2)</sup> ReFoPlan FKZ – 3719 52 1010: "Revision of emission factors for air pollutants in the cement clinker production and glass manufacturing sectors" downloading via