

Table of contents

List of Tables.....	5
List of Figures	6
1. Introduction	7
2. Compilation approach of the indicators	9
3. Changes in the toxic chemicals indicator	12
4. Toxic chemicals: aggregation scheme according to R-phrases and changes in the PRODCOM database	14
4.1. Introduction.....	14
4.2. Classification of chemicals by toxicity class.....	14
4.3. Changes in the PRODCOM database	15
5. Revision of the indicators.....	17
5.1. Revision of hazard information: replacement of risk phrases by hazard statements .	17
5.1.1. Background	17
5.1.2. Content of the Classification and labelling Inventory.....	18
5.1.3. Approaches to evaluating Classification and Labelling Inventory data.....	20
5.1.4. Justification.....	20
5.2. Assigning hazard statements to toxicity classes.....	22
5.3. Changes in class assignment following the revision	23
6. Update of the indicator	26
6.1. Production of toxic chemicals according to H-statements: Production volume and share of toxicity classes	26
6.1.1. EU-28	26
6.1.2. EU-15	26
6.2. Production of toxic chemicals according to R-phrases: Production volume and share of toxicity classes	28
6.3. Production of toxic chemicals in EU-15: Comparison of results from ‘H-statement aggregation’ and ‘R-phrases aggregation’	30
6.4. Consumption of toxic chemicals: Results for aggregation by H-statements.....	34
7. References.....	37
8. Additional resources.....	38
8.1. Eurostat information	38
8.2. External links	39
9. Annexes	40
9.1. Annex 1: Assignment of risk phrases and hazard statements to toxic impact classes.....	40

9.2.	Annex 2: Assignment of risk phrases and hazard statements to environmental impact classes	42
9.3.	Annex 3: Assessing intermediates covered by the indicator	43
9.3.1.	Background	43
9.3.2.	Analysis	44
9.3.2.1.	Registration types for reference substances evaluated within the Indicator.....	44
9.3.2.2.	Indicator substances with full registrations only.....	45
9.3.2.3.	Indicator substances with both a full registration and an intermediate registration.....	46
9.3.2.4.	PRODCOM data for indicator substances with full and intermediate registrations.....	46
9.3.2.5.	Indicator substances with registrations as intermediates only.....	47
9.3.2.6.	Very high production volume substances.....	47
9.3.3.	Addendum: Comparison of indicator substances registered with a full registration and those registered with a full and an intermediate registration	49
9.4.	Annex 4: Toxicity classes of indicator substances	58
9.5.	Annex 5: Mapping of the new dataset ENV_CHMHAZ with the new codes and labels towards the old version	64

List of Tables

Table 1:	PRODCOM categories in NACE Rev.1 and NACE Rev.2	10
Table 2:	Classification of toxic properties.....	14
Table 3:	Classification by R-phrases.....	15
Table 4:	Coverage of chemicals and identified toxic chemicals.....	15
Table 5:	Number of products of toxic chemicals in PRODCOM per toxicity class	23
Table 6:	Comparison of the shares of CMR and 'all toxic chemicals' in EU-15 and EU-28 from 2004 to 2013	27
Table 7:	Change in production share in EU-15 for toxicity classes according to R-phrases and H-statements.....	33
Table 8:	Summary of the assignment to toxic impact classes	40
Table 9:	Summary of the assignment to environmental impact classes	42
Table 10:	Results of the evaluation using REACH registration types for reference substances in the dataset	44
Table 11:	Example of reference substances in the dataset with REACH registration types.....	45
Table 12:	High production PRODCOM entries evaluated for the indicator and REACH registration type	48
Table 13:	Comparison of tonnage data in REACH registrations and PRODCOM to delineate uses for substances with both full and intermediate REACH registrations.....	53
Table 14:	Summary of the assignment to toxic impact classes per substance evaluated	58
Table 15:	Mapping of the new dataset ENV_CHMHAZ for the new codes and labels towards the old version.....	64

List of Figures

Figure 1: Compilation approach for the indicator ‘Production of toxic chemicals’	11
Figure 2: Development of the revised indicator ‘Production of toxic chemicals’	12
Figure 3: Screenshot of information from the C & L Inventory for lithium hydroxide*	19
Figure 4: Screenshot of selected information from the C & L Inventory for <i>isoprene</i>	21
Figure 5: Decision tree for selection of data from the C & L Inventory	22
Figure 6: Changes in class assignment after inclusion of C & L Inventory data (‘Production of toxic chemicals’): percent of substances assigned to each toxicity class	24
Figure 7: Development of the total production in EU-15 and EU-28: production volume (million tonnes per annum) by toxicity classes (based on H-statements).....	27
Figure 8: Development of the total production in EU-15 and EU-28: share according to toxicity classes (based on H-statements).....	28
Figure 9: Development of the total production in EU-15: production volume (in 1 000 tonnes per annum) according to toxicity classes (based on R-phrases).....	29
Figure 10: Development of the total production in EU-15: share according to toxicity classes (based on R-phrases)	29
Figure 11: Number of chemicals per toxicity class based on R-phrases and based on H-statements.....	30
Figure 12: Results for ‘Production of toxic chemicals’ according to the two classification schemes for the year 2013: production volume in million tonnes per annum.....	31
Figure 13: Comparison for ‘Production of toxic chemicals – EU-15’ according to the H-statements and R-phrases classification scheme: production volume in million tonnes per annum	32
Figure 14: Comparison for ‘Production of toxic chemicals – EU-15’ according to H-statements and R-phrases classification scheme: production share.....	33
Figure 15: Consumption and production of chemicals by toxicity class (EU-28 based on H-statements, production volume in million tonnes per annum)	34
Figure 16: Consumption and production of chemicals (in million tonnes per annum) by toxicity class (EU-28 based on H-statements, 2013)	35
Figure 17: Share of net imports on consumption of chemicals by toxicity class (EU-28 based on H-statements, production volume 2013)	36
Figure 18: Tonnage band discrimination of substances with a full registration and substances with both a full and an intermediate registration	49
Figure 19: Tonnage band information for reference substances in the dataset compared to all substances registered: cumulative percentage of substances.....	50
Figure 20: Comparison of REACH data and PRODCOM data for production figures	51