

Table 3 continued

LCI of various Sodium Silicates						
Weighted average		Na-silicate 3,3 (WR) furnace lumps, 100%	Na-silicate 3.3 (WR) furnace liquor, 37% solid	Na-silicate 2.0 (WR) hydrothermal liquor, 48% solid	Na-silicate 2.0 (WR) spray powder, 80% solid	Na-metasilicate Pentahydrate (1.0 WR), 58% solid
Functional unit		1,000 kg	1,000 kg	1,000 kg	1,000 kg	1,000 kg
Solid waste						
Mineral waste	kg	127	47.2	20.2	28.9	27.6
Filter residues	kg		0.9	1.2	4.1	2.8
Inert chemicals	kg	0.6	0.3	1.7	3.0	3.7
Slags & ash	kg			2.3	4.0	4.2
Regulated chemicals	kg			0.004	0.01	0.01
Air emissions						
Ammonia (NH3)	g	237	88.3	0.03	0.3	0.2
Carbon dioxide fossil (CO ₂)	g	1,066,022	424,668	288,698	892,353	570,190
Carbon monoxide	g	3,748	1,406	218	509	404
Dust, particles	g	3,886	1,454	667	1,509	1,257
Methane (CH4)	g	666	307	128	1,338	371
Nitrogen oxides (NO _x)	g	3,606	1,424	1,748	3,490	3,26
Non methane hc (NMVOC)	g	1,035	420	1,451	2,588	2,63
Sulphur oxides (SO _x)	g	4,699	1,914	2,186	4,181	4,08
Water emissions						
Ammonium (NH4+)	g	121.6	45.4	0.6	1.4	1.0
BOD as g O ₂	g	0.35	0.14	0.65	1.15	1.18
Chlorides (Cl-)	g	374,589	139,365	6,316	11,197	11,546
COD as g O ₂	g	3.9	1.6	9.8	6.3	14.1
Inorg. Salts and acids	g	229,533	85,413	1,034	2,066	4,537
Metals	g	26.5	11.5	17.3	35.2	32.8
Suspended solids	g	28,752	10,704	892	4,196	605
Water consumption		7.3	3.5	1.9	5.1	3.5

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Life Cycle Inventories for the Production of Detergent Ingredients

Silvio Dall'Acqua, Dr. Matthias Fawer, Renato Fritschi, Caroline Allenspach

1999, 109 pages, bound, incl. 3.5" diskettes with excel data files, CHF 100.-/ Euro 62.-
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This study (commissioned by the German Federal Environmental Agency, UBA Berlin and the Ökoinstitut Freiburg, Germany) presents basic data on the production of the most important ingredients for detergents. These data have been harmonised and updated and are published as life cycle inventories.

Two different groups are targeted. The first is the users of these LCIs from the detergent industry. The second target group consists of the LCA experts in general. The problem of LCIs that are incompatible due to the use of varied methodologies and basic data is a common one. This study can be helpful in demonstrating solutions for these problems.

Applying the data published here eliminates concerns over whether the data are compatible with each other, and they can therefore be combined quickly and simply. Users of these data can be sure that:

- A uniform methodology, which is compliant with ISO 14 000 ff, has been applied in the life cycle inventories
- Joint basic data on energy production, transport and basic chemicals have been used

- The LCI parameters are compatible with each other
- The structure of the individual LCIs is constant

It is thus possible for users to obtain reliable and meaningful results. Through the qualitative descriptions in the individual inventories, they can also quickly recognise whether the data are appropriate to their needs.

Summary of the Table of Contents

- Basic introduction in the field of detergent ingredients
- Detailed description of the LCI methodology applied
- Description of the individual ingredients and performed amendments and methodological variations
- Basic data and life cycle inventories
- Critical review report by Dr. Rolf Bretz, Ciba SC
- Statement on the critical review report
- Comparison of different terms used for parameters
- Glossary of terms
- Standard questionnaire for collecting data

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