

hydrogen (electrolytic)

1. Allgemeine Informationen

1.1 Beschreibung

1.2 Referenzen

1.3 Projektspezifika

1.4 Weitere Metadaten

1.5 Technische Kennwerte

2. Inputs/Outputs

3. Umweltaspekte

3.1 Ressourcen

3.2 Luftemissionen

3.3 Gewässereinleitungen

3.4 Abfälle

1. Allgemeine Informationen

1.1 Beschreibung

The data presented here include the gross or cumulative energy requirements, the gross energy data expressed in terms of primary fuels, the energy data expressed as masses of fuels, the raw materials requirements, the demand for water, the air emissions, the corresponding carbon dioxide equivalents of these air emissions, the emissions to water, and the generated solid waste associated with the production of 1 kg of hydrogen (electrolytic) (further information and flow charts at www.lca.plasticseurope.org).

1.2 Referenzen

#1 PlasticsEurope 2005: Eco-profiles of the European Plastics Industry. www.lca.plasticseurope.org March 2005.

1.3 Projektspezifika

Es liegen hierzu keine Angaben vor.

1.4 Weitere Metadaten

Quelle	PlasticsEurope
Projekte	
Bearbeitet durch	-
Datensatzprüfung	Kein Review
Ortsbezug	Europa
Zeitbezug	keine Angabe

1.5 Technische Kennwerte

Funktionelle Einheit	1 kg hydrogen (electrolytic)
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2. Inputs/Outputs

Outputs

<u>Input</u>	<u>Menge</u>	<u>Einheit</u>
hydrogen (electrolytic)	1	kg

3. Umweltaspekte

3.1 Ressourcen

<u>Ressource</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
Air	0	124	mg
Animal matter	0	2,37E-6	mg
Barytes	0	5,53	mg
Bauxite	0	0,189	mg
Bentonite	0	0,035	mg
Biomass (including water)	0	6684	mg
Biomass (liquid/gas)	0	0,0234	MJ
Biomass (solid)	0	0,0358	MJ
Calcium sulphate (CaSO ₄)	0	0,0031	mg
Chalk (CaCO ₃)	0	496E-30	mg
Clay	0	0,000197	mg
Coal	0	150072	mg
Coal	0	4,3	MJ
Cr	0	9,58E-6	mg
Crude oil	0	26857	mg
Cu	0	18,6E-6	mg
Dolomite	0	0,542	mg
Electricity	0	11,8	MJ
Fe	0	44,4	mg
Feldspar	0	4,55E-15	mg
Ferromanganese	0	0,0403	mg
Fluorspar	0	0,00348	mg
Gas	0	4,54	MJ
Gas/condensate	0	86233	mg
Geothermal	0	0,069	MJ
Granite	0	3,04E-9	mg
Gravel	0	0,164	mg
Hg	0	4,38	mg
Hydro	0	0,751	MJ
Hydrogen	0	0,458	MJ
Industrial waste	0	0,0609	MJ
Lignite	0	7192	mg
Lignite	0	0,108	MJ
Limestone (CaCO ₃)	0	67,2	mg
Metallurgical coal	0	17,9	mg

3.1 Ressourcen (Fortsetzung)

<u>Ressource</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
Mg	0	8,44E-21	mg
Municipal Waste	0	0,0807	MJ
N2	0	195	mg
Ni	0	3,78E-6	mg
Nuclear	0	4,34	MJ
O2	0	0,978	mg
Oil	0	1,21	MJ
Oil fuels	0	0,374	MJ
Olivine	0	0,416	mg
Other fuels	0	3,91	MJ
Pb	0	0,341	mg
Peat	0	0,000567	MJ
Peat	0	64,1	mg
Phosphate as P2O5	0	0,000347	mg
Potassium chloride (KCl)	0	0,0918	mg
Quartz (SiO2)	0	359E-30	mg
Recovered energy	0	0,0284	MJ
Rutile	0	712E-30	mg
S (bonded)	0	0,00822	mg
S (elemental)	0	0,458	mg
Sand (SiO2)	0	0,0248	mg
Shale	0	0,00875	mg
Sodium chloride (NaCl)	0	252	mg
Sodium nitrate (NaNO3)	0	25,4E-21	mg
Solar	0	0,000612	MJ
Sulphur	0	4,24E-6	MJ
Talc	0	16E-21	mg
Unspecified	0	0,00161	MJ
Unspecified	0	3,81E-42	mg
Water Use - Public supply	0	1794	mg
Water Use - River canal	0	64,1	mg
Water Use - Sea	0	296	mg
Water Use - Unspecified	0	1920691	mg
Water Use - Well	0	0,208	mg
Wave/tidal	0	0,000665	MJ
Wind	0	0,0474	MJ
Wood	0	0,0159	MJ

3.1 Ressourcen (Fortsetzung)

<u>Ressource</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
Wood	0	1794	mg
Zn	0	0,041	mg

3.2 Luftemissionen

<u>Name</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
Ag+compounds as Ag	0	196E-18	mg
aldehyde (-CHO)	0	958E-12	mg
aromatic HC not specified elsewhere	0	0,0897	mg
As+compounds as As	0	2,48E-15	mg
asbestos	0	19,6E-6	mg
benzene C ₆ H ₆	0	153E-12	mg
Cd+compounds as Cd	0	42,1E-6	mg
CFC/HCFC/HFC not specified elsewhere	0	0,00305	mg
CH ₄	0	5877	mg
Cl ₂	0	0,0111	mg
CO	0	614	mg
CO ₂	0	812080	mg
Cr+compounds as Cr	0	74,8E-9	mg
CS ₂	0	2,5E-9	mg
Cu+compounds as Cu	0	725E-9	mg
dichloroethane (DCE) C ₂ H ₄ Cl ₂	0	14,8E-6	mg
dioxin/furan as Teq	0	2,48E-30	mg
dust (PM ₁₀)	0	441	mg
ethylbenzene C ₈ H ₁₀	0	13,2E-12	mg
ethylene C ₂ H ₄	0	38,9E-9	mg
F ₂	0	94,7E-6	mg
H ₂	0	44910	mg
H ₂ S	0	0,00148	mg
H ₂ SO ₄	0	8,2E-6	mg
HCl	0	82	mg
HCN	0	36,2E-18	mg
HF	0	3,17	mg
Hg+compounds as Hg	0	1,07	mg
hydrocarbons not specified elsewhere	0	492	mg
mercaptan	0	9,02E-6	mg
metals not specified elsewhere	0	0,897	mg

3.2 Luftemissionen (Fortsetzung)

<u>Name</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
methylene chloride CH ₂ Cl ₂	0	28,4E-6	mg
N ₂ O	0	514E-9	mg
NH ₃	0	0,152	mg
Ni+compounds as Ni	0	93,2E-9	mg
NM VOC	0	0,0552	mg
NO _X as NO ₂	0	2187	mg
organics	0	0,262	mg
organo-chlorine not specified elsewhere	0	0,0819	mg
oxygen	0	295E-18	mg
Pb+compounds as Pb	0	0,000112	mg
polycyclic hydrocarbons (PAH)	0	72,6E-12	mg
propylene	0	45,2E-12	mg
Sb+compounds as Sb	0	2,37E-9	mg
Se+compounds as Se	0	6,78E-18	mg
SO _X as SO ₂	0	3157	mg
styrene	0	1,12E-12	mg
toluene C ₇ H ₈	0	28,1E-12	mg
vinyl chloride monomer (VCM)	0	0,000332	mg
xylenes C ₈ H ₁₀	0	12,9E-12	mg
Zn+compounds as Zn	0	0,000108	mg

Luftemissionen (Aggregierte Werte)

<u>Name</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
CO ₂ Equivalents - 100 year equiv	0	949963	mg
CO ₂ Equivalents - 20 year equiv	0	1179179	mg
CO ₂ Equivalents - 500 year equiv	0	855925	mg

3.3 Gewässereinleitungen

<u>Name</u>	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
acid as H ⁺	0	0,879	mg
Al+compounds as Al	0	0,000116	mg
ammonium compounds as NH ₄ ⁺	0	0,997	mg
AOX	0	727E-9	mg
As+compounds as As	0	1,02E-6	mg
benzene	0	2,44E-12	mg
BOD	0	0,0803	mg

3.3 Gewässereinleitungen (Fortsetzung)

Name	<u>direkt</u>	<u>inkl. Vorkette</u>	<u>Einheit</u>
BrO3--	0	37,5E-6	mg
Ca+compounds as Ca	0	0,395	mg
Cd+compounds as Cd	0	431E-9	mg
Cl-	0	26082	mg
ClO3--	0	20,4	mg
CN-	0	4,21E-6	mg
CO3--	0	0,00711	mg
COD	0	1,91	mg
Cr+compounds as Cr	0	138E-9	mg
Cu+compounds as Cu	0	0,501	mg
detergent/oil	0	0,0021	mg
dichloroethane (DCE)	0	337E-9	mg
dioxin/furan as Teq	0	223E-12	mg
dissolved chlorine	0	0,00029	mg
dissolved organics (non-hydrocarbon)	0	0,146	mg
dissolved solids not specified elsewhere	0	878	mg
F-	0	0,000215	mg
Fe+compounds as Fe	0	0,0233	mg
Hg+compounds as Hg	0	0,0428	mg
hydrocarbons not specified elsewhere	0	0,00653	mg
K+compounds as K	0	0,00296	mg
metals not specified elsewhere	0	6,48	mg
Mg+compounds as Mg	0	0,00178	mg
Mn+compounds as Mn	0	47,4E-6	mg
Na+compounds as Na	0	16872	mg
Ni+compounds as Ni	0	0,335	mg
NO3-	0	0,00777	mg
organo-chlorine not specified elsewhere	0	0,00159	mg
organo-silicon	0	2,24E-18	mg
organo-tin as Sn	0	278E-12	mg
other nitrogen as N	0	0,195	mg
other organics not specified elsewhere	0	88,7E-6	mg
P+compounds as P	0	0,839	mg
Pb+compounds as Pb	0	50,3E-6	mg
phenols	0	0,000536	mg
S+sulphides as S	0	370E-9	mg
SO4--	0	49	mg

3.3 Gewässereinleitungen (Fortsetzung)

Name	direkt	inkl. Vorkette	Einheit
Sr+compounds as Sr	0	346E-9	mg
Suspended Solids	0	776	mg
TOC	0	0,351	mg
vinyl chloride monomer (VCM)	0	6,16E-6	mg
Zn+compounds as Zn	0	0,000105	mg

3.4 Abfälle

Name	direkt	inkl. Vorkette	Einheit
Construction waste	0	1,9	mg
Inert chemical	0	0,133	mg
Metals	0	0,00834	mg
Mineral waste	0	1763	mg
Mixed industrial	0	-2634	mg
Municipal solid waste	0	-7609	mg
Paper	0	0,000942	mg
Plastic containers	0	9,86E-6	mg
Plastics	0	305	mg
Putrescibles	0	0,138	mg
Regulated chemicals	0	525	mg
Slags ash	0	14167	mg
Tailings	0	16,5	mg
Unregulated chemicals	0	443	mg
Unspecified refuse	0	314	mg
Waste returned to mine	0	28711	mg
Waste to incinerator	0	0,346	mg
Waste to recycling	0	0,0015	mg
Wood waste	0	35,9	mg
Wooden pallets	0	48,2E-6	mg