

Appendixes

Appendix A Research Proposal



Faculty of Technology, Natural Sciences and Maritime Sciences, Campus Porsgrunn

FMH606 Master's Thesis

Title: Life cycle assessment (LCA) of the application of dry-type HHO cell with internal combustion engines.

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External partner: A.R. Nihmiya, Udara S.P.R. Arachchige
(University of Sri Jayewardenepura, Sri Lanka.)

Task background:

A dry-type HHO cell, also known as a Brown's Gas generator or HHO generator, is a device designed to produce a mixture of hydrogen and oxygen gases through the electrolysis of water. The term "dry-type" indicates that the cell operates without the need for a liquid electrolyte solution, which is commonly used in traditional wet-cell electrolysis setups.

The concept of Brown's Gas is named after Yull Brown, an inventor and researcher who claimed that this specific mixture of hydrogen and oxygen had unique properties, including higher energy content and greater combustion efficiency compared to individual hydrogen and oxygen gases. However, the actual benefits of Brown's Gas are still debated within the scientific community.

This significant advancement aims to boost efficiency by substituting traditional stainless-steel electrodes with graphite electrodes in dry-type HHO generators. The goal is to improve production rates by conducting efficiency calculations that compare the application of stainless-steel electrodes with that of graphite electrodes.

Performing a Life Cycle Assessment (LCA) on a dry-type HHO cell can provide valuable insights into its environmental impacts and help to make informed decisions about its feasibility and sustainability. LCA is a systematic approach to evaluating the environmental aspects and potential impacts of a product, process, or technology throughout its entire life cycle, from raw material extraction to production, use, and disposal.

Task description:

Aiming to achieve the abovementioned directives, the following tasks are proposed.

- Design and construct the Dry type HHO generator with applying graphite electrodes. (optional)
- Conduct an extensive literature review of the application to identify potential environmental emissions associated with the production of HHO generator and its application with IC engine
- Perform a literature review of modelling methodologies used for LCA within the application of dry-type HHO generator with IC or similar technological applications.
- Develop a relevant LCA model using OpenLCA
- Identify environmental impact potentials causing from the life cycle of the product and determine key areas of concern within the process stream. Subsequently, propose mitigation techniques designed to alleviate these impacts.

Student category: EET (assigned to Dasun Kaushalya Siriwardena)

Is the task suitable for online students (not present at the campus)? Yes/No

Practical arrangements: OpenLCA software and the Ecoinvent database are the tools of choice for LCA.

Supervision:

As a general rule, the student is entitled to 15-20 hours of supervision. This includes necessary time for the supervisor to prepare for supervision meetings (reading material to be discussed, etc).

Signatures:

Supervisor (date and signature): *Gamunu Samarakoon* 25-08-2023

Student: MIRINCHIGE BUDDHIKA DASUN KAUSHALYA SIRIWARDENA

Dasun

Appendix B: Table of Inventory Inputs Results

Inputs		
Flow	Result	Unit
Aluminium, in ground	823582.9	kg
Anhydrite, in ground	14.81524	kg
Antimony, in ground	4.264405	kg
Argon-40	42016.81	kg
Arsenic, in ground	2.640468	kg
Barium, in ground	100506.4	kg
Basalt, in ground	2566878	kg
Borax, in ground	303.4534	kg
Bromine, in water	6.459581	kg
Cadmium, in ground	70.04372	kg
Calcite, in ground	38785143	kg
Calcium, in ground	74184.64	kg
Carbon dioxide, in air	23503468	kg
Carbon dioxide, non-fossil, resource correction	-5800265	kg
Carbon, organic, in soil or biomass stock	22466.22	kg
Carnallite	316.0471	kg
Cerium, in ground	813.22	kg
Chromium, in ground	10118.36	kg

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Chrysotile, in ground	1893.609	kg
Clay, bentonite, in ground	143655.5	kg
Clay, unspecified, in ground	35350349	kg
Coal, brown, in ground	3809190	kg
Coal, hard, unspecified, in ground	22199719	kg
Cobalt, in ground	127.2161	kg
Colemanite, in ground	371.7168	kg
Copper, in ground	57236.2	kg
Diatomite, in ground	0.003802	kg
Dolomite, in ground	428555	kg
Dysprosium, in ground	0.790388	kg
Energy, geothermal, converted	280631.6	kWh
Energy, gross calorific value, in biomass	74920312	kWh
Energy, gross calorific value, in biomass, primary forest	150469.8	kWh
Energy, kinetic (in wind), converted	2422861	kWh
Energy, potential (in hydropower reservoir), converted	19448235	kWh
Energy, solar, converted	49048.02	kWh
Europium, in ground	3.501905	kg
Feldspar, in ground	1.063323	kg
Fish, demersal, in ocean	1.3E-21	kg
Fish, pelagic, in ocean	1.41E-11	kg

Appendixes

Fluorine, in ground	590.7244	kg
Fluorspar, in ground	6847.247	kg
Gadolinium, in ground	11.09743	kg
Gallium, in ground	254.586	kg
Gangue, bauxite, in ground	8711147	kg
Gangue, in ground	29670155	kg
Gas, mine, off-gas, process, coal mining	184151	m3
Gas, natural, in ground	8209712	m3
Gold, in ground	1.983065	kg
Granite, in ground	16415775	kg
Gravel, in ground	4.48E+08	kg
Gypsum, in ground	1290356	kg
Hafnium, in ground	79.51062	kg
Iodine, in water	1.424793	kg
Iron, in ground	11139426	kg
Kaolinite, in ground	1485.972	kg
Kieserite, in ground	0.000805	kg
Krypton, in air	5.64E-09	kg
Lanthanum, in ground	434.9142	kg
Laterite, in ground	194534.8	kg
Lead, in ground	129196.4	kg

Appendixes

Lithium, in ground	0.050437	kg
Magnesite, in ground	50004.1	kg
Magnesium, in ground	59685.28	kg
Manganese, in ground	145801.5	kg
Mercury, in ground	0.110246	kg
Metamorphous rock, graphite containing, in ground	11751.62	kg
Molybdenum, in ground	1022.226	kg
Neodymium, in ground	286.2247	kg
Nickel, in ground	68202.25	kg
Niobium, in ground	68.39243	kg
Nitrogen	2265906	kg
Occupation, annual crop	13991.2	m ² *a
Occupation, annual crop, irrigated	2017.448	m ² *a
Occupation, annual crop, irrigated, intensive	2.770962	m ² *a
Occupation, annual crop, non-irrigated	74.6762	m ² *a
Occupation, annual crop, non-irrigated, extensive	37.1973	m ² *a
Occupation, annual crop, non-irrigated, intensive	102877	m ² *a
Occupation, arable land, unspecified use	1.531829	m ² *a
Occupation, construction site	14680.44	m ² *a
Occupation, dump site	540600.9	m ² *a
Occupation, forest, extensive	493178.8	m ² *a

Appendixes

Occupation, forest, intensive	47448339	m2*a
Occupation, grassland, natural (non-use)	11077.23	m2*a
Occupation, grassland, natural, for livestock grazing	9.13E-05	m2*a
Occupation, industrial area	34904834	m2*a
Occupation, inland waterbody, unspecified	76.72471	m2*a
Occupation, lake, artificial	420702.8	m2*a
Occupation, mineral extraction site	1208282	m2*a
Occupation, pasture, man made	0.000166	m2*a
Occupation, pasture, man made, extensive	0.000192	m2*a
Occupation, pasture, man made, intensive	9.204525	m2*a
Occupation, permanent crop	2727.517	m2*a
Occupation, permanent crop, irrigated	448.4324	m2*a
Occupation, permanent crop, irrigated, intensive	3.300203	m2*a
Occupation, permanent crop, non-irrigated	13971.94	m2*a
Occupation, river, artificial	82791.86	m2*a
Occupation, seabed, drilling and mining	3830.746	m2*a
Occupation, seabed, infrastructure	36.286	m2*a
Occupation, shrub land, sclerophyllous	29958.01	m2*a
Occupation, traffic area, rail network	120850.7	m2*a
Occupation, traffic area, rail/road embankment	842170.8	m2*a
Occupation, traffic area, road network	17001625	m2*a

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Occupation, unspecified	34914.77	m2*a
Occupation, unspecified, natural (non-use)	12906.53	m2*a
Occupation, urban, discontinuously built	60.35471	m2*a
Occupation, urban/industrial fallow (non-use)	6.152363	m2*a
Oil, crude, in ground	27315034	kg
Olivine, in ground	5.368044	kg
Oxygen	12207602	kg
Palladium, in ground	0.162312	kg
Peat, in ground	27316.02	kg
Perlite, in ground	5.423665	kg
Phosphorus, in ground	3603.306	kg
Platinum, in ground	0.15613	kg
Potassium, in ground	3344.477	kg
Praseodymium, in ground	95.09611	kg
residual wood, dry	0.001322	m3
Rhenium, in ground	0.0951	kg
Rhodium, in ground	0.020386	kg
Samarium, in ground	15.64109	kg
Sand, unspecified, in ground	49572420	kg
Scandium, in ground	1.057588	kg
Selenium, in ground	70.27864	kg

Appendixes

Shale, in ground	7235117	kg
Silicon, in ground	7870.541	kg
Silver, in ground	315.4715	kg
Sodium chloride, in ground	5408916	kg
Sodium nitrate, in ground	46.35073	kg
Sodium sulphate, various forms, in ground	566.1865	kg
Sodium, in ground	81.44615	kg
Spodumene, in ground	7.858892	kg
Strontium, in ground	237.8429	kg
Sulfur, in ground	26591.79	kg
Sylvite, in ground	4012.942	kg
Talc, in ground	233.2033	kg
Tantalum, in ground	2.629952	kg
Tellurium, in ground	13.09184	kg
Terbium, in ground	0.474233	kg
Tin, in ground	340.0558	kg
Titanium, in ground	23742.96	kg
Transformation, from annual crop	12745.35	m2
Transformation, from annual crop, irrigated	1738.905	m2
Transformation, from annual crop, irrigated, intensive	0.819901	m2
Transformation, from annual crop, non-irrigated	117302.3	m2

Appendixes

Transformation, from annual crop, non-irrigated, extensive	33.35246	m2
Transformation, from annual crop, non-irrigated, intensive	448.9524	m2
Transformation, from arable land, unspecified use	6762.758	m2
Transformation, from cropland fallow (non-use)	164.3237	m2
Transformation, from dump site, inert material landfill	5049.718	m2
Transformation, from dump site, residual material landfill	539.0897	m2
Transformation, from dump site, sanitary landfill	328.1285	m2
Transformation, from dump site, slag compartment	73.80285	m2
Transformation, from forest, extensive	110294.2	m2
Transformation, from forest, intensive	503101.9	m2
Transformation, from forest, primary (non-use)	1632.784	m2
Transformation, from forest, secondary (non-use)	137.443	m2
Transformation, from forest, unspecified	39008.45	m2
Transformation, from grassland, natural (non-use)	650.0906	m2
Transformation, from grassland, natural, for livestock grazing	164.7308	m2
Transformation, from heterogeneous, agricultural	1.746342	m2
Transformation, from industrial area	290.651	m2
Transformation, from mineral extraction site	10456.32	m2
Transformation, from pasture, man made	11027.43	m2
Transformation, from pasture, man made, extensive	3.85E-06	m2
Transformation, from pasture, man made, intensive	26.36823	m2

Appendixes

Transformation, from permanent crop	202.2653	m2
Transformation, from permanent crop, irrigated	16.24571	m2
Transformation, from permanent crop, irrigated, intensive	0.141579	m2
Transformation, from permanent crop, non-irrigated	698.5972	m2
Transformation, from river, natural (non-use)	2626.121	m2
Transformation, from seabed, infrastructure	0.084496	m2
Transformation, from seabed, unspecified	3832.847	m2
Transformation, from shrub land, sclerophyllous	6283.125	m2
Transformation, from traffic area, rail/road embankment	2289.891	m2
Transformation, from traffic area, road network	3.27E-14	m2
Transformation, from unspecified	889401.2	m2
Transformation, from unspecified, natural (non-use)	6.243286	m2
Transformation, from wetland, inland (non-use)	2975.858	m2
Transformation, to annual crop	2597.261	m2
Transformation, to annual crop, irrigated	1738.905	m2
Transformation, to annual crop, irrigated, intensive	2.868586	m2
Transformation, to annual crop, non-irrigated	117283	m2
Transformation, to annual crop, non-irrigated, extensive	45.42091	m2
Transformation, to annual crop, non-irrigated, intensive	11754.79	m2
Transformation, to arable land, unspecified use	9684.878	m2
Transformation, to cropland fallow (non-use)	320.2762	m2

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Transformation, to dump site	3438.942	m2
Transformation, to dump site, inert material landfill	5049.718	m2
Transformation, to dump site, residual material landfill	539.116	m2
Transformation, to dump site, sanitary landfill	328.1285	m2
Transformation, to dump site, slag compartment	73.80285	m2
Transformation, to forest, extensive	3793.754	m2
Transformation, to forest, intensive	604243.3	m2
Transformation, to forest, secondary (non-use)	3.85E-14	m2
Transformation, to forest, unspecified	12871.29	m2
Transformation, to grassland, natural (non-use)	147.6964	m2
Transformation, to grassland, natural, for livestock grazing	3.02E-06	m2
Transformation, to heterogeneous, agricultural	755.6874	m2
Transformation, to industrial area	697593.2	m2
Transformation, to inland waterbody, unspecified	0.767247	m2
Transformation, to lake, artificial	5380.917	m2
Transformation, to mineral extraction site	61478.7	m2
Transformation, to pasture, man made	29.29345	m2
Transformation, to pasture, man made, extensive	3.85E-06	m2
Transformation, to pasture, man made, intensive	0.462266	m2
Transformation, to permanent crop	631.6544	m2
Transformation, to permanent crop, irrigated	16.24571	m2

Appendixes

Transformation, to permanent crop, irrigated, intensive	0.141579	m2
Transformation, to permanent crop, non-irrigated	698.5972	m2
Transformation, to river, artificial	880.7747	m2
Transformation, to seabed, drilling and mining	3830.746	m2
Transformation, to seabed, infrastructure	2.101478	m2
Transformation, to seabed, unspecified	0.084496	m2
Transformation, to shrub land, sclerophyllous	5990.739	m2
Transformation, to traffic area, rail network	279.5329	m2
Transformation, to traffic area, rail/road embankment	8214.203	m2
Transformation, to traffic area, road network	167366.4	m2
Transformation, to unspecified	2942.154	m2
Transformation, to unspecified, natural (non-use)	314.7934	m2
Transformation, to urban, discontinuously built	1.209183	m2
Transformation, to urban/industrial fallow (non-use)	0.082032	m2
Transformation, to wetland, inland (non-use)	1.22E-13	m2
Ulexite, in ground	10.14464	kg
Uranium, in ground	161.483	kg
Vanadium, in ground	2.72437	kg
venting of argon, crude, liquid	3.907561	kg
venting of nitrogen, liquid	-72.4323	kg
Volume occupied, final repository for low-active radioactive waste	3.704637	m3

Appendixes

Volume occupied, final repository for radioactive waste	0.068791	m3
Volume occupied, reservoir	2298932	m3*a
Volume occupied, underground deposit	8.81101	m3
Water LK	20	m3
Water, cooling, unspecified natural origin	3543446	m3
Water, in air	395.0291	m3
Water, lake	18389.82	m3
Water, river	250738.8	m3
Water, salt, ocean	34415.91	m3
Water, salt, sole	16252.59	m3
Water, turbine use, unspecified natural origin	4.75E+08	m3
Water, unspecified natural origin	1021259	m3
Water, unspecified natural origin	44141.08	m3
Water, well, in ground	449822.7	m3
Wood, hard, standing	1939.239	m3
Wood, soft, standing	25096.68	m3
Wood, unspecified, standing	0.132515	m3
Xenon, in air	6.61E-10	kg
Yttrium, in ground	2.898089	kg
Zinc, in ground	599592.5	kg
Zirconium, in ground	4380.452	kg

Appendix C: Table of Inventory Output Results

Outputs		
Flow	Result	Unit
1,3-Dioxolan-2-one	38.73499	kg
1,4-Butanediol	0.002243	kg
1,4-Butanediol	0.005159	kg
1-Pentanol	0.000693	kg
1-Pentanol	0.000289	kg
1-Pentene	0.000524	kg
1-Pentene	0.017487	kg
2,2,4-Trimethyl pentane	2.77E-05	kg
2,4-D	0.013681	kg
2,4-D	3.079167	kg
2,4-D amines	4.16E-12	kg
2,4-D amines	1.71E-14	kg
2,4-D amines	7.93E-13	kg
2,4-D amines	1.34E-10	kg
2,4-D ester	3.85E-12	kg
2,4-D ester	1.58E-14	kg
2,4-D ester	9.5E-13	kg
2,4-D ester	1.24E-10	kg
2,4-DB	-6.6E-09	kg

Appendixes

2,4-DB	-2.7E-11	kg
2,4-DB	-9.3E-10	kg
2,4-DB	-2.1E-07	kg
2-Aminopropanol	0.000652	kg
2-Aminopropanol	0.000271	kg
2-Methyl pentane	1.392167	kg
2-Methyl-1-propanol	0.000862	kg
2-Methyl-1-propanol	0.002068	kg
2-Methyl-2-butene	3.95E-07	kg
2-Methyl-2-butene	1.65E-07	kg
2-Nitrobenzoic acid	0.000649	kg
2-Propanol	0.009825	kg
2-Propanol	0.85765	kg
2-Propanol	3.483849	kg
2-Propanol	0.00048	kg
2-Propanol	50.68375	kg
4-Methyl-2-pentanol	0.001959	kg
4-Methyl-2-pentanone	0.379762	kg
4-Methyl-2-pentanone	0.01675	kg
4-Methyl-2-pentanone	1.05E-05	kg
4-Methyl-2-pentanone	0.055356	kg

Appendixes

Abamectin	0.00051	kg
Acenaphthene	0.000905	kg
Acenaphthene	0.001114	kg
Acenaphthene	0.000343	kg
Acenaphthene	0.008415	kg
Acenaphthylene	0.005873	kg
Acenaphthylene	2.15E-05	kg
Acenaphthylene	0.000473	kg
Acephate	0.001454	kg
Acephate	3.506729	kg
Acetaldehyde	33.948	kg
Acetaldehyde	463.717	kg
Acetaldehyde	124.4695	kg
Acetaldehyde	36.82762	kg
Acetamide	0.000358	kg
Acetamide	0.000178	kg
Acetamiprid	0.002889	kg
Acetic acid	73.72714	kg
Acetic acid	196.8682	kg
Acetic acid	38.75877	kg
Acetic acid	458.2609	kg

Appendixes

Acetochlor	0.037326	kg
Acetone	2.130126	kg
Acetone	0.039924	kg
Acetone	91.07418	kg
Acetone	156.3932	kg
Acetone	8.8596	kg
Acetonitrile	0.000231	kg
Acetonitrile	1.95325	kg
Acetyl chloride	0.000544	kg
Acidity, unspecified	12.79526	kg
Acidity, unspecified	0.84004	kg
Acifluorfen	0.0002	kg
Acifluorfen	8.56E-06	kg
Aclonifen	8.33E-07	kg
Acrinathrin	4.81E-16	kg
Acrolein	20.81696	kg
Acrolein	0.783666	kg
Acrolein	0.215154	kg
Acrylate, ion	0.069725	kg
Acrylic acid	0.02946	kg
Actinides, radioactive, unspecified	133.7039	kBq

Appendixes

Actinides, radioactive, unspecified	3308.73	kBq
Aerosols, radioactive, unspecified	21.7157	kBq
Alachlor	0.001413	kg
Alachlor	0.000807	kg
Aldehydes, unspecified	0.343252	kg
Aldehydes, unspecified	1.588237	kg
Aldehydes, unspecified	0.228189	kg
Aldicarb	0.015324	kg
Aldrin	0.004554	kg
Allyl chloride	0.006586	kg
Alpha-cypermethrin	0.000833	kg
Aluminium	78.84311	kg
Aluminium	81.92441	kg
Aluminium	6441.515	kg
Aluminium	452.0331	kg
Aluminium	6.268661	kg
Aluminium	86.87617	kg
Aluminium	1650.364	kg
Aluminium	916.9073	kg
Aluminium	224.426	kg
Aluminium	412254.9	kg

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Aluminium	266.0056	kg
Aluminium	162.9947	kg
Aluminium hydroxide	0.002417	kg
Ametryn	0.000475	kg
Amidosulfuron	8.48E-07	kg
Ammonia	170624.2	kg
Ammonia	4253.838	kg
Ammonia	869.144	kg
Ammonia	1.979178	kg
Ammonia	0.542724	kg
Ammonium carbonate	6.972516	kg
Ammonium sulfate	0.000702	kg
Ammonium, ion	1372.958	kg
Ammonium, ion	4.133828	kg
Ammonium, ion	86.3601	kg
Ammonium, ion	9963.341	kg
Ammonium, ion	375.9604	kg
Aniline	0.006808	kg
Aniline	14.56056	kg
Aniline	0.002834	kg
Anthracene	0.000189	kg

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Anthracene	1.13E-08	kg
Anthranilic acid	0.000505	kg
Anthraquinone	-7.4E-06	kg
Antimony	0.045295	kg
Antimony	230.3888	kg
Antimony	0.478318	kg
Antimony	3.174791	kg
Antimony	0.016813	kg
Antimony	0.094244	kg
Antimony	1.740815	kg
Antimony	7.07E-05	kg
Antimony	272.406	kg
Antimony	124.329	kg
Antimony	1.782284	kg
Antimony-122	2.858111	kBq
Antimony-124	11094.38	kBq
Antimony-124	0.004272	kBq
Antimony-125	147.0181	kBq
Antimony-125	0.073982	kBq
AOX, Adsorbable Organic Halogen as Cl	14.60857	kg
AOX, Adsorbable Organic Halogen as Cl	0.002276	kg

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AOX, Adsorbable Organic Halogen as Cl	3.87816	kg
Argon-40	21.77355	kg
Argon-41	7158.946	kBq
Arsenic	4.608017	kg
Arsenic	1.370938	kg
Arsenic	29.19513	kg
Arsenic	0.427254	kg
Arsenic	0.277333	kg
Arsenic	0.998061	kg
Arsenic	0.059273	kg
Arsenic, ion	195.3917	kg
Arsenic, ion	236.5642	kg
Arsenic, ion	0.193667	kg
Arsenic, ion	20.90231	kg
Arsenic, ion	1.692984	kg
Arsine	3.43E-07	kg
Asulam	4.92E-10	kg
Atrazine	2.42E-09	kg
Atrazine	6.27E-07	kg
Atrazine	0.001117	kg
Atrazine	0.311153	kg

Appendixes

Azadirachtin	0.03002	kg
Azinphos-methyl	0.001199	kg
Azoxystrobin	0.000661	kg
Azoxystrobin	0.610168	kg
Barite	597.6591	kg
Barite	2386.849	kg
Barium	88.83535	kg
Barium	7.553337	kg
Barium	12.26043	kg
Barium	0.85843	kg
Barium	9.149229	kg
Barium	340.2763	kg
Barium	0.012	kg
Barium	3934.052	kg
Barium	1055.178	kg
Barium	5.705917	kg
Barium	48.02679	kg
Barium	556.3962	kg
Barium-140	6.2072	kBq
Barium-140	2.386414	kBq
Benomyl	0.000254	kg

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Bensulfuron methyl ester	2.37E-06	kg
Bentazone	5.57E-09	kg
Bentazone	8.99E-06	kg
Bentazone	0.000612	kg
Bentazone	0.000301	kg
Benz(a)anthracene	7.12E-07	kg
Benz(a)anthracene	0.000113	kg
Benzal chloride	0.04411	kg
Benzal chloride	0.01838	kg
Benzal chloride	2.92E-06	kg
Benzaldehyde	16.09464	kg
Benzaldehyde	0.064165	kg
Benzaldehyde	1.435038	kg
Benzene	1265.582	kg
Benzene	332.4955	kg
Benzene	3892.303	kg
Benzene	12.23532	kg
Benzene	388.1715	kg
Benzene	6.710902	kg
Benzene, chloro-	18.27695	kg
Benzene, dichloro	0.002184	kg

Appendixes

Benzene, ethyl-	0.37657	kg
Benzene, ethyl-	356.1842	kg
Benzene, ethyl-	17.67835	kg
Benzene, ethyl-	6.058686	kg
Benzene, ethyl-	1.324869	kg
Benzene, ethyl-	29.05162	kg
Benzene, hexachloro-	6.94E-07	kg
Benzene, hexachloro-	0.000525	kg
Benzene, hexachloro-	5.04E-11	kg
Benzene, hexachloro-	0.009112	kg
Benzene, pentachloro-	1.14E-06	kg
Benzene, pentachloro-	0.001326	kg
Benzo(a)pyrene	8.65E-08	kg
Benzo(a)pyrene	0.020501	kg
Benzo(a)pyrene	1.318121	kg
Benzo(a)pyrene	27.45702	kg
Benzo(b)fluoranthene	8.44E-08	kg
Benzo(b)fluoranthene	0.000134	kg
Benzo(ghi)perylene	1.19E-08	kg
Benzo(ghi)perylene	8.26E-06	kg
Benzo(k)fluoranthene	3.97E-08	kg

Appendixes

Benzo(k)fluoranthene	9.7E-05	kg
Benzyl alcohol	0.001926	kg
Beryllium	0.04036	kg
Beryllium	0.045233	kg
Beryllium	0.010792	kg
Beryllium	0.112021	kg
Beryllium	0.053986	kg
Beryllium	0.098071	kg
Beryllium	0.034421	kg
Beryllium	118.0472	kg
Beryllium	0.050308	kg
Beryllium	0.147296	kg
Beta-cyfluthrin	3.48E-05	kg
Beta-cyfluthrin	0.036561	kg
Bifenox	-1.2E-06	kg
Bifenthrin	0.022962	kg
Bitertanol	-9.6E-07	kg
BOD5, Biological Oxygen Demand	904283.7	kg
BOD5, Biological Oxygen Demand	222934.7	kg
BOD5, Biological Oxygen Demand	434.9119	kg
BOD5, Biological Oxygen Demand	29027.81	kg

Appendixes

BOD5, Biological Oxygen Demand	4561.85	kg
Borate	0.089092	kg
Borate	0.176264	kg
Boric acid	1.3E-10	kg
Boron	16.83823	kg
Boron	6.44691	kg
Boron	135.785	kg
Boron	0.22051	kg
Boron	25.18973	kg
Boron	0.444455	kg
Boron	9.864434	kg
Boron	3.48353	kg
Boron	0.003001	kg
Boron	633.8894	kg
Boron	20.86506	kg
Boron	5.444371	kg
Boron trifluoride	8.78E-07	kg
Boscalid	1.37E-14	kg
Bromate	45.09854	kg
Bromide	5.735027	kg
Bromine	856.4123	kg

Appendixes

Bromine	0.943438	kg
Bromine	11.05235	kg
Bromine	58.00385	kg
Bromine	0.13518	kg
Bromine	0.263727	kg
Bromine	2.941064	kg
Bromine	993.9979	kg
Bromine	9959.048	kg
Bromine	3.22591	kg
Bromine	38.64202	kg
Bromoxynil	-1.1E-13	kg
Bromoxynil	-6.9E-10	kg
Bromoxynil	-2.5E-09	kg
Bromoxynil	0.003487	kg
Bromuconazole	7.56E-08	kg
Buprofezin	1.25E-07	kg
Butadiene	0.000165	kg
Butadiene	7.17E-05	kg
Butane	149.0771	kg
Butane	291.2319	kg
Butane	1.790435	kg

Appendixes

Butanol	9.157637	kg
Butanol	0.002044	kg
Butene	0.150931	kg
Butene	0.485759	kg
Butyl acetate	11.89864	kg
Butyrolactone	0.000963	kg
Cadmium	0.175399	kg
Cadmium	6.010536	kg
Cadmium	8.50392	kg
Cadmium	0.180128	kg
Cadmium	3.95E-07	kg
Cadmium	0.132393	kg
Cadmium	0.070188	kg
Cadmium	4.581611	kg
Cadmium	0.004813	kg
Cadmium, ion	0.53637	kg
Cadmium, ion	2.81583	kg
Cadmium, ion	2.676656	kg
Cadmium, ion	151.9348	kg
Cadmium, ion	0.149735	kg
Calcium	62.04249	kg

Appendixes

Calcium	218.8158	kg
Calcium	39.06621	kg
Calcium	8.481005	kg
Calcium	312.4561	kg
Calcium	3013.662	kg
Calcium	2077.806	kg
Calcium, ion	13286.4	kg
Calcium, ion	62945.55	kg
Calcium, ion	2064742	kg
Calcium, ion	7685.121	kg
Calcium, ion	2585.614	kg
Captan	6E-07	kg
Carbaryl	9.08E-13	kg
Carbaryl	7.29E-11	kg
Carbaryl	0.000167	kg
Carbaryl	0.000195	kg
Carbendazim	3.155681	kg
Carbetamide	0.002449	kg
Carbofuran	0.141294	kg
Carbon	192461.7	kg
Carbon	167.9779	kg

Appendixes

Carbon	1212.254	kg
Carbon dioxide, fossil	50683299	kg
Carbon dioxide, fossil	65350069	kg
Carbon dioxide, fossil	17619442	kg
Carbon dioxide, fossil	122.8476	kg
Carbon dioxide, fossil	7442.534	kg
Carbon dioxide, from soil or biomass stock	183994.6	kg
Carbon dioxide, from soil or biomass stock	1701.976	kg
Carbon dioxide, non-fossil	8892490	kg
Carbon dioxide, non-fossil	1430040	kg
Carbon dioxide, non-fossil	331683.5	kg
Carbon dioxide, to soil or biomass stock	4428.197	kg
Carbon dioxide, to soil or biomass stock	48.53917	kg
Carbon disulfide	0.003983	kg
Carbon disulfide	0.01059	kg
Carbon disulfide	439.1809	kg
Carbon disulfide	5.42E-07	kg
Carbon monoxide, fossil	378856.1	kg
Carbon monoxide, fossil	29517.5	kg
Carbon monoxide, fossil	99677.38	kg
Carbon monoxide, fossil	0.081336	kg

Appendixes

Carbon monoxide, fossil	2372.732	kg
Carbon monoxide, from soil or biomass stock	1128.544	kg
Carbon monoxide, non-fossil	45336.29	kg
Carbon monoxide, non-fossil	3381.704	kg
Carbon monoxide, non-fossil	4053.978	kg
Carbon-14	1221.864	kBq
Carbon-14	686574.6	kBq
Carbonate	196.2886	kg
Carbonate	333.4076	kg
Carbonate	1.70254	kg
Carbonyl sulfide	28.25423	kg
Carbosulfan	8.91E-06	kg
Carboxylic acids, unspecified	0.000322	kg
Carboxylic acids, unspecified	970.6596	kg
Carboxylic acids, unspecified	4454.577	kg
Carfentrazone-ethyl	1.83E-05	kg
Carfentrazone-ethyl	0.000639	kg
Cerium-141	2.762311	kBq
Cerium-141	0.578398	kBq
Cerium-144	1.523904	kBq
Cesium	0.055203	kg

Appendixes

Cesium	1.210483	kg
Cesium-134	94.35854	kBq
Cesium-134	0.027702	kBq
Cesium-136	0.888417	kBq
Cesium-137	969.4239	kBq
Cesium-137	15321.24	kBq
Cesium-137	0.502664	kBq
Chloramine	0.019606	kg
Chloramine	0.002196	kg
Chlorate	350.835	kg
Chloridazon	6.74E-06	kg
Chloride	156484.2	kg
Chloride	3367.744	kg
Chloride	2851522	kg
Chloride	19.7441	kg
Chloride	707998.3	kg
Chloride	74547.32	kg
Chloride	222774	kg
Chloride	57842.49	kg
Chloride, ion	219.0073	kg
Chlorides, unspecified	1940.996	kg

Appendixes

Chlorimuron-ethyl	0.000333	kg
Chlorimuron-ethyl	0.070298	kg
Chlorinated solvents, unspecified	6.978371	kg
Chlorinated solvents, unspecified	0.016839	kg
Chlorine	75.84694	kg
Chlorine	3.410146	kg
Chlorine	572.8674	kg
Chlorine	20.6933	kg
Chlorine	0.025099	kg
Chlorine	0.953562	kg
Chlorine	6.863484	kg
Chlorine	6.863484	kg
Chlormequat	0.000563	kg
Chloroacetic acid	0.228632	kg
Chloroacetic acid	0.053153	kg
Chloroacetyl chloride	0.00087	kg
Chloroform	0.004871	kg
Chloroform	8.93E-05	kg
Chloroform	0.35684	kg
Chloroform	0.156391	kg
Chloroform	0.016102	kg

Appendixes

Chloropicrin	5.13E-12	kg
Chlorosilane, trimethyl-	2.102585	kg
Chlorosulfonic acid	0.000842	kg
Chlorosulfonic acid	0.000338	kg
Chlorosulfonic acid	9.59E-06	kg
Chlorothalonil	0.334011	kg
Chlorpyrifos	0.006651	kg
Chlorpyrifos	0.081042	kg
Chlorpyrifos methyl	0.206198	kg
Chlorsulfuron	1.04E-07	kg
Chlortoluron	1.34E-05	kg
Choline chloride	1.44E-05	kg
Chromium	50.27867	kg
Chromium	5.460943	kg
Chromium	48.17423	kg
Chromium	1.97E-06	kg
Chromium	0.0012	kg
Chromium	1.794095	kg
Chromium	1.415187	kg
Chromium	8.08378	kg
Chromium	0.055043	kg

Appendixes

Chromium IV	2.31E-06	kg
Chromium VI	1.336732	kg
Chromium VI	0.124091	kg
Chromium VI	0.04867	kg
Chromium VI	1.401007	kg
Chromium VI	0.057018	kg
Chromium VI	5.596353	kg
Chromium VI	860.1747	kg
Chromium VI	2534.836	kg
Chromium VI	3.233238	kg
Chromium, ion	0.330701	kg
Chromium, ion	0.731516	kg
Chromium, ion	14.67505	kg
Chromium, ion	0.056848	kg
Chromium-51	471.0077	kBq
Chromium-51	0.037064	kBq
Chrysene	4.59E-07	kg
Chrysene	1.31E-05	kg
Cinidon-ethyl	1.03E-06	kg
Clethodim	0.000986	kg
Clethodim	0.001605	kg

Appendixes

Clodinafop-propargyl	1.59E-06	kg
Clomazone	8.37E-05	kg
Clopyralid	1.93E-06	kg
Cloquintocet-mexyl	3.72E-07	kg
Cloransulam-methyl	0.000174	kg
Cloransulam-methyl	0.00047	kg
Clothianidin	9.24E-05	kg
Cobalt	0.005723	kg
Cobalt	2.601938	kg
Cobalt	0.896482	kg
Cobalt	5.305134	kg
Cobalt	0.160472	kg
Cobalt	0.545529	kg
Cobalt	1.7258	kg
Cobalt	0.185215	kg
Cobalt	4.411473	kg
Cobalt	1107.89	kg
Cobalt	2.984183	kg
Cobalt	0.099391	kg
Cobalt-57	28.20171	kBq
Cobalt-58	3801.336	kBq

Appendixes

Cobalt-58	0.077757	kBq
Cobalt-60	2527.482	kBq
Cobalt-60	0.576627	kBq
COD, Chemical Oxygen Demand	3770015	kg
COD, Chemical Oxygen Demand	232044.2	kg
COD, Chemical Oxygen Demand	1831.84	kg
COD, Chemical Oxygen Demand	29058.7	kg
COD, Chemical Oxygen Demand	6292.492	kg
Copper	198.9167	kg
Copper	4.0205	kg
Copper	83.66281	kg
Copper	2.551041	kg
Copper	6.64E-05	kg
Copper	2.73525	kg
Copper	6.881013	kg
Copper	31.12015	kg
Copper	-0.07476	kg
Copper, ion	7.164239	kg
Copper, ion	15.57566	kg
Copper, ion	36.53366	kg
Copper, ion	16243.46	kg

Appendixes

Copper, ion	1.39133	kg
Cu-HDO	6.71E-07	kg
Cumene	104.2241	kg
Cumene	214.9081	kg
Cumene	0.00869	kg
Cumene	2.21E-08	kg
Cumene	89.43379	kg
Cyanide	7.839178	kg
Cyanide	21.20291	kg
Cyanide	1.411893	kg
Cyanide	0.002377	kg
Cyanide	52.88192	kg
Cyanide	33.45677	kg
Cyanoacetic acid	0.000276	kg
Cyclohexane	4.6E-09	kg
Cyclohexane (for all cycloalkanes)	0.084294	kg
Cyhalothrin, gamma-	0.000399	kg
Cyhalothrin, gamma-	1.71E-05	kg
Cymoxanil	0.000553	kg
Cypermethrin	0.069651	kg
Cyproconazole	0.365568	kg

Appendixes

Cyprodinil	0.000208	kg
Deltamethrin	2.08E-06	kg
Desmedipham	6.45E-05	kg
Diafenthiuron	2.16E-05	kg
Diazinon	0.004546	kg
Dibenz(a,h)anthracene	8.31E-09	kg
Dibenz(a,h)anthracene	6.62E-05	kg
Dibutyltin	9.02E-23	kg
Dicamba	2.66E-10	kg
Dicamba	6.64E-08	kg
Dicamba	0.000112	kg
Dicamba	0.000873	kg
Dichlorprop	3.86E-12	kg
Dichlorprop	1.58E-14	kg
Dichlorprop	7.71E-13	kg
Dichlorprop	1.24E-10	kg
Dichlorprop-P	0.30687	kg
Dichlorvos	4.58E-07	kg
Dichromate	0.118434	kg
Dichromate	0.166471	kg
Diclofop	-1.2E-05	kg

Appendixes

Diclofop-methyl	-1.2E-05	kg
Diethanolamine	0.000237	kg
Diethyl ether	1.08E-08	kg
Diethylamine	0.003161	kg
Diethylamine	0.001317	kg
Diethylene glycol	9.19E-09	kg
Difenoconazole	0.007466	kg
Diflubenzuron	1.83E-05	kg
Diflubenzuron	0.268111	kg
Diflufenican	2.86E-05	kg
Diflufenzopyr-sodium	3.22E-05	kg
Diisobutyl ketone	0.126896	kg
Dimethachlor	0.000117	kg
Dimethenamid	8.02E-11	kg
Dimethenamid	6.42E-09	kg
Dimethenamid	1.82E-08	kg
Dimethenamid	0.000845	kg
Dimethoate	0.003231	kg
Dimethomorph	0.000119	kg
Dimethyl carbonate	3.76406	kg
Dimethyl ether	0.793841	kg

Appendixes

Dimethyl malonate	0.000347	kg
Dimethylamine	0.009924	kg
Dimethylamine	0.000131	kg
Dinitrogen monoxide	1407.433	kg
Dinitrogen monoxide	701.815	kg
Dinitrogen monoxide	0.365677	kg
Dinitrogen monoxide	1469.505	kg
Dinitrogen tetroxide	0.014085	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	2.48E-10	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	4.34E-05	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	9.5E-05	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	9.84E-06	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	1.08E-09	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	1.1E-05	kg
Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin	8.89E-08	kg
Diphenyltin	5.71E-21	kg
Dipropylamine	0.001648	kg
Dipropylamine	0.000687	kg
Diquat	0.056667	kg
Discarded fish, demersal, to ocean	1.62E-22	kg
Discarded fish, pelagic, to ocean	5.31E-13	kg

Appendixes

Dissolved solids	44176.95	kg
Dissolved solids	2491.941	kg
Dissolved solids	177579.6	kg
Dithianon	8.48E-06	kg
Diuron	0.380581	kg
DOC, Dissolved Organic Carbon	1500.284	kg
DOC, Dissolved Organic Carbon	3392071	kg
DOC, Dissolved Organic Carbon	70434.4	kg
DOC, Dissolved Organic Carbon	1686.965	kg
DOC, Dissolved Organic Carbon	8310.478	kg
Elemental carbon	1.315561	kg
Elemental carbon	4.501764	kg
Elemental carbon	4.501764	kg
Endosulfan	0.086466	kg
Endothall	3.91E-05	kg
Epoxiconazole	0.132701	kg
EPTC	0.049137	kg
Esfenvalerate	0.000208	kg
Esfenvalerate	0.000681	kg
Ethalfuralin	3.89E-05	kg
Ethane	2349.645	kg

Appendixes

Ethane	0.414997	kg
Ethane	93.94579	kg
Ethane, 1,1,1,2-tetrafluoro-, HFC-134a	0.036026	kg
Ethane, 1,1,1,2-tetrafluoro-, HFC-134a	0.011079	kg
Ethane, 1,1,1,2-tetrafluoro-, HFC-134a	0.064723	kg
Ethane, 1,1,1-trichloro-, HCFC-140	2.17E-12	kg
Ethane, 1,1,1-trichloro-, HCFC-140	0.031933	kg
Ethane, 1,1,1-trichloro-, HCFC-140	4.56E-07	kg
Ethane, 1,1,1-trifluoro-, HFC-143a	2.06E-28	kg
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	0.004006	kg
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	0.014815	kg
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	0.001398	kg
Ethane, 1,1-difluoro-, HFC-152a	0.476418	kg
Ethane, 1,1-difluoro-, HFC-152a	0.030365	kg
Ethane, 1,2-dichloro-	0.13434	kg
Ethane, 1,2-dichloro-	0.000745	kg
Ethane, 1,2-dichloro-	0.116485	kg
Ethane, 1,2-dichloro-	0.509623	kg
Ethane, 1,2-dichloro-	0.063687	kg
Ethane, 2-chloro-1,1,1,2-tetrafluoro-, HCFC-124	0.004006	kg
Ethane, hexafluoro-, HFC-116	0.097679	kg

Appendixes

Ethane, hexafluoro-, HFC-116	2.88491	kg
Ethane, pentafluoro-, HFC-125	2.67E-27	kg
Ethanol	21.47306	kg
Ethanol	6.68E-05	kg
Ethanol	11.00541	kg
Ethanol	7.411479	kg
Ethanol	0.000164	kg
Ethene	250.1079	kg
Ethene	269.0533	kg
Ethene	60.53972	kg
Ethene	52.70715	kg
Ethene, chloro-	0.057058	kg
Ethene, chloro-	0.001192	kg
Ethene, chloro-	0.031291	kg
Ethene, chloro-	0.349401	kg
Ethene, tetrachloro-	0.068523	kg
Ethene, tetrachloro-	1.530916	kg
Ethene, tetrachloro-	0.000361	kg
Ethene, trichloro-	0.005345	kg
Ethephon	1.74E-16	kg
Ethephon	2.87E-14	kg

Appendixes

Ethephon	4.36E-13	kg
Ethephon	0.00038	kg
Ethofumesate	0.000342	kg
Ethoprop	0.011385	kg
Ethyl acetate	0.015909	kg
Ethyl acetate	16.39742	kg
Ethyl cellulose	0.032733	kg
Ethylamine	0.003222	kg
Ethylamine	0.001343	kg
Ethylene	0.037089	kg
Ethylene diamine	0.002562	kg
Ethylene diamine	0.001063	kg
Ethylene oxide	0.360551	kg
Ethylene oxide	2.603036	kg
Ethylene oxide	0.224335	kg
Ethyne	22.86346	kg
Ethyne	0.519308	kg
Ethyne	195.7387	kg
Fenbuconazole	2.22E-06	kg
Fenoxaprop	0.000272	kg
Fenoxaprop	0.000936	kg

Appendixes

Fenoxaprop ethyl ester	-1E-06	kg
Fenoxaprop-P ethyl ester	2.09E-05	kg
Fenpiclonil	0.007757	kg
Fenpropidin	0.00014	kg
Fenpropimorph	0.000178	kg
Fentin hydroxide	0.00197	kg
Fipronil	0.398254	kg
Florasulam	-2.4E-07	kg
Fluazifop-p-butyl	0.000391	kg
Fluazifop-P-butyl	0.000354	kg
Flucarbazone sodium salt	6.51E-09	kg
Fludioxonil	2.15E-05	kg
Flufenacet	0.000147	kg
Flufenacet	-2.9E-06	kg
Flumetsulam	3.43E-05	kg
Flumetsulam	5.79E-05	kg
Flumiclorac-pentyl	5.87E-05	kg
Flumiclorac-pentyl	2.51E-06	kg
Flumioxazin	0.000594	kg
Flumioxazin	0.004559	kg
Fluoranthene	0.003737	kg

Appendixes

Fluoranthene	0.001086	kg
Fluorene	0.001377	kg
Fluorene	0.000989	kg
Fluoride	117.9126	kg
Fluoride	63.92956	kg
Fluoride	3.801614	kg
Fluoride	24.77375	kg
Fluoride	693.4109	kg
Fluoride	14276.66	kg
Fluoride	83.93942	kg
Fluorine	1.328468	kg
Fluorine	4.598875	kg
Fluorine	3.366067	kg
Fluorine	2.96891	kg
Fluorochloridone	9.91E-27	kg
Fluosilicic acid	33.8257	kg
Fluosilicic acid	1.310772	kg
Fluosilicic acid	18.79205	kg
Flupyr-sulfuron-methyl	1.01E-08	kg
Fluquinconazole	1.93E-06	kg
Fluroxypyr	6.53E-06	kg

Appendixes

Flurtamone	1.29E-05	kg
Flusilazole	6.62E-06	kg
Flutolanil	0.00224	kg
Fomesafen	0.002207	kg
Fomesafen	0.003635	kg
Foramsulfuron	6.04E-06	kg
Formaldehyde	1.19898	kg
Formaldehyde	40.92241	kg
Formaldehyde	847.447	kg
Formaldehyde	801.182	kg
Formaldehyde	545.6439	kg
Formamide	0.001267	kg
Formamide	0.000528	kg
Formate	0.168296	kg
Formic acid	0.000368	kg
Formic acid	0.020528	kg
Formic acid	11.93653	kg
Fungicides, unspecified	0.031998	kg
Fungicides, unspecified	9.67E-06	kg
Furan	52.08667	kg
Furan	3.55E-08	kg

Appendixes

Glufosinate	0.001672	kg
Glutaraldehyde	0.294673	kg
Glyphosate	0.000219	kg
Glyphosate	1.42E-06	kg
Glyphosate	0.000166	kg
Glyphosate	0.442637	kg
Glyphosate	32.94401	kg
Glyphosate	7.356129	kg
Halosulfuron-methyl	6.74E-07	kg
Haloxypop- (R) Methyleneester	0.158001	kg
Heat, waste	37879579	kWh
Heat, waste	12384.65	kWh
Heat, waste	19680827	kWh
Heat, waste	5652039	kWh
Heat, waste	49.00924	kWh
Heat, waste	433891.5	kWh
Heat, waste	4702994	kWh
Heat, waste	505496.4	kWh
Helium	0.443442	kg
Helium	42.78712	kg
Heptane	3.524379	kg

Appendixes

Heptane	6.634574	kg
Herbicides, unspecified	0.000657	kg
Hexane	104.5319	kg
Hexane	97.89128	kg
Hexane	6.15E-05	kg
Hydrocarbons, aliphatic, alkanes, cyclic	21.02798	kg
Hydrocarbons, aliphatic, alkanes, cyclic	0.923358	kg
Hydrocarbons, aliphatic, alkanes, unspecified	166.833	kg
Hydrocarbons, aliphatic, alkanes, unspecified	44.00656	kg
Hydrocarbons, aliphatic, alkanes, unspecified	242.5116	kg
Hydrocarbons, aliphatic, alkanes, unspecified	0.000151	kg
Hydrocarbons, aliphatic, alkanes, unspecified	7.176375	kg
Hydrocarbons, aliphatic, alkanes, unspecified	157.3628	kg
Hydrocarbons, aliphatic, unsaturated	1.72E-10	kg
Hydrocarbons, aliphatic, unsaturated	101.6666	kg
Hydrocarbons, aliphatic, unsaturated	31.7638	kg
Hydrocarbons, aliphatic, unsaturated	21.60843	kg
Hydrocarbons, aliphatic, unsaturated	0.662435	kg
Hydrocarbons, aliphatic, unsaturated	14.52735	kg
Hydrocarbons, aromatic	5.208237	kg
Hydrocarbons, aromatic	61.03269	kg

Appendixes

Hydrocarbons, aromatic	232.7578	kg
Hydrocarbons, aromatic	32.10897	kg
Hydrocarbons, aromatic	630.3827	kg
Hydrocarbons, chlorinated	7.052296	kg
Hydrocarbons, chlorinated	179.7255	kg
Hydrocarbons, chlorinated	0.32331	kg
Hydrocarbons, unspecified	130.45	kg
Hydrocarbons, unspecified	34.11937	kg
Hydrocarbons, unspecified	361.283	kg
Hydrocarbons, unspecified	237.0284	kg
Hydrocarbons, unspecified	400.9303	kg
Hydrochloric acid	189.0753	kg
Hydrochloric acid	0.000339	kg
Hydrogen	382.6017	kg
Hydrogen	755.5399	kg
Hydrogen carbonate	204.6223	kg
Hydrogen chloride	78567.32	kg
Hydrogen chloride	2811.707	kg
Hydrogen chloride	5441.586	kg
Hydrogen chloride	67.41456	kg
Hydrogen fluoride	79.87854	kg

Appendixes

Hydrogen fluoride	704.1064	kg
Hydrogen fluoride	640.5285	kg
Hydrogen fluoride	1.082794	kg
Hydrogen peroxide	2.505829	kg
Hydrogen peroxide	0.010739	kg
Hydrogen sulfide	10.38193	kg
Hydrogen sulfide	136.5066	kg
Hydrogen sulfide	504.1362	kg
Hydrogen sulfide	17.9634	kg
Hydrogen sulfide	6.082765	kg
Hydrogen sulfide	5049.568	kg
Hydrogen sulfide	9510.22	kg
Hydrogen-3, Tritium	65323734	kBq
Hydrogen-3, Tritium	31832007	kBq
Hydrogen-3, Tritium	1511537	kBq
Hydroxide	1.299056	kg
Hydroxide	0.430498	kg
Hypochlorite	3.952275	kg
Hypochlorite	4.017744	kg
Imazamox	8.78E-05	kg
Imazamox	0.003256	kg

Appendixes

Imazapyr	8.06E-07	kg
Imazaquin	0.00028	kg
Imazaquin	1.2E-05	kg
Imazethapyr	0.000579	kg
Imazethapyr	0.001184	kg
Imidacloprid	0.450339	kg
Indeno(1,2,3-cd)pyrene	1.3E-07	kg
Indeno(1,2,3-cd)pyrene	2.6E-05	kg
Indoxacarb	0.000183	kg
Insecticides, unspecified	9.85E-10	kg
Iodide	0.293699	kg
Iodide	6.16E-05	kg
Iodide	0.249102	kg
Iodide	129.202	kg
Iodide	5.520288	kg
Iodine	2.250054	kg
Iodine	29.89372	kg
Iodine	0.178893	kg
Iodine	9.91E-07	kg
Iodine-129	82.31595	kBq
Iodine-131	2166.303	kBq

Appendixes

Iodine-131	1623.057	kBq
Iodine-133	4.55991	kBq
Iodine-133	5.754161	kBq
Iodosulfuron	1.29E-07	kg
Iodosulfuron-methyl-sodium	6.31E-09	kg
Ioxynil	5.01E-05	kg
Iprodion	0.004346	kg
Iron	1106.168	kg
Iron	193.6519	kg
Iron	5.756432	kg
Iron	98.31197	kg
Iron	18926.27	kg
Iron	1715.1	kg
Iron	1007.236	kg
Iron	22.6054	kg
Iron, ion	616.2186	kg
Iron, ion	295958	kg
Iron, ion	6327.712	kg
Iron, ion	3.1266	kg
Iron, ion	603.7017	kg
Iron-59	9966.274	kBq

Appendixes

Isocyanic acid	77.35541	kg
Isoprene	0.173622	kg
Isoprene	4.74E-07	kg
Isopropylamine	0.001712	kg
Isopropylamine	0.000713	kg
Isoproturon	0.000396	kg
Isoxaflutole	0.001665	kg
Kresoxim-methyl	5.65E-05	kg
Krypton-85	23815.74	kBq
Krypton-85m	50285.65	kBq
Krypton-87	7774.62	kBq
Krypton-88	10222.84	kBq
Krypton-89	4308.472	kBq
Lactic acid	0.001291	kg
Lactic acid	0.000538	kg
Lactofen	0.000282	kg
Lactofen	1.21E-05	kg
Lambda-cyhalothrin	1.75E-20	kg
Lambda-cyhalothrin	6.96E-18	kg
Lambda-cyhalothrin	1.38E-14	kg
Lambda-cyhalothrin	0.358606	kg

Appendixes

Lanthanum-140	7.400286	kBq
Lanthanum-140	0.203914	kBq
Lauric acid	0.000528	kg
Lead	94.59945	kg
Lead	6.278497	kg
Lead	113.2026	kg
Lead	3.106263	kg
Lead	0.000788	kg
Lead	1.130406	kg
Lead	3.05269	kg
Lead	70.17106	kg
Lead	0.004167	kg
Lead	8.124854	kg
Lead	3.30199	kg
Lead	10.62103	kg
Lead	9197.282	kg
Lead	1.226796	kg
Lead-210	1484.179	kBq
Lead-210	1156.157	kBq
Lead-210	3.8904	kBq
Lead-210	68.37213	kBq

Appendixes

Lead-210	2695.772	kBq
Lead-210	12617.02	kBq
Lead-210	74.37494	kBq
Lenacil	3.5E-05	kg
Linuron	0.003645	kg
Lithium	0.000225	kg
Lithium	0.017199	kg
Lithium	0.017199	kg
Lithium, ion	0.037869	kg
Lithium, ion	4294.656	kg
m-Xylene	0.001283	kg
m-Xylene	0.121031	kg
m-Xylene	12.34507	kg
m-Xylene	3.447064	kg
m-Xylene	0.001	kg
Magnesium	2506.265	kg
Magnesium	21.31305	kg
Magnesium	21.13775	kg
Magnesium	170.4961	kg
Magnesium	2.592071	kg
Magnesium	885.7677	kg

Appendixes

Magnesium	77.72707	kg
Magnesium	234.5397	kg
Magnesium	7332.955	kg
Magnesium	273590.9	kg
Magnesium	3239.27	kg
Magnesium	2304.206	kg
Malathion	0.004873	kg
Maleic hydrazide	0.012452	kg
Mancozeb	0.444306	kg
Mandipropamid	2.69E-05	kg
Maneb	0.00029	kg
Manganese	14.48468	kg
Manganese	37.02081	kg
Manganese	6.218087	kg
Manganese	17.01721	kg
Manganese	4.502505	kg
Manganese	4.805067	kg
Manganese	111.5337	kg
Manganese	125.1193	kg
Manganese	88.14907	kg
Manganese	23755.94	kg

Appendixes

Manganese	186.6382	kg
Manganese	2.220934	kg
Manganese-54	140.3967	kBq
Manganese-54	0.018981	kBq
MCPA	-7.4E-09	kg
MCPA	-2.9E-11	kg
MCPA	-2.5E-09	kg
MCPA	2.43E-05	kg
MCPB	2.19E-14	kg
MCPB	4.73E-12	kg
MCPB	2.23E-12	kg
MCPB	3.81E-08	kg
Mecoprop	5.95E-06	kg
Mecoprop-P	2.92E-05	kg
Mefenpyr	-1.6E-06	kg
Mefenpyr-diethyl	-1.3E-06	kg
Mepiquat chloride	4.49E-06	kg
Mercury	0.436808	kg
Mercury	0.472354	kg
Mercury	1.127743	kg
Mercury	0.023017	kg

Appendixes

Mercury	2.031534	kg
Mercury	2.75E-09	kg
Mercury	0.009657	kg
Mercury	0.306532	kg
Mercury	0.003548	kg
Mercury	0.241355	kg
Mercury	0.025829	kg
Mercury	19.56543	kg
Mercury	0.012999	kg
Mesosulfuron-methyl (prop)	3.48E-08	kg
Mesotrione	0.00199	kg
Metalaxil	0.016183	kg
Metaldehyde	0.001334	kg
Metam-sodium	2.029227	kg
Metamitron	0.001817	kg
Metazachlor	0.000275	kg
Metconazole	1.48E-05	kg
Methane	6.987623	kg
Methane, bromo-, Halon 1001	0.002019	kg
Methane, bromo-, Halon 1001	6.77E-17	kg
Methane, bromochlorodifluoro-, Halon 1211	0.11859	kg

Appendixes

Methane, bromotrifluoro-, Halon 1301	1.81E-07	kg
Methane, bromotrifluoro-, Halon 1301	1.245748	kg
Methane, chlorodifluoro-, HCFC-22	1.604266	kg
Methane, chlorodifluoro-, HCFC-22	11.86724	kg
Methane, chlorodifluoro-, HCFC-22	3.27E-16	kg
Methane, dichloro-, HCC-30	16.37301	kg
Methane, dichloro-, HCC-30	0.016418	kg
Methane, dichloro-, HCC-30	1.191853	kg
Methane, dichloro-, HCC-30	0.462625	kg
Methane, dichlorodifluoro-, CFC-12	0.01962	kg
Methane, dichlorodifluoro-, CFC-12	4.44E-07	kg
Methane, dichlorodifluoro-, CFC-12	0.000161	kg
Methane, dichlorofluoro-, HCFC-21	0.000207	kg
Methane, fossil	16894.92	kg
Methane, fossil	49150.07	kg
Methane, fossil	201999.3	kg
Methane, fossil	0.044799	kg
Methane, from soil or biomass stock	73.78943	kg
Methane, monochloro-, R-40	0.84574	kg
Methane, non-fossil	42995.6	kg
Methane, non-fossil	6266.995	kg

Appendixes

Methane, non-fossil	40.70397	kg
Methane, tetrachloro-, R-10	5.47E-05	kg
Methane, tetrachloro-, R-10	0.008752	kg
Methane, tetrachloro-, R-10	0.404246	kg
Methane, tetrafluoro-, R-14	0.002741	kg
Methane, tetrafluoro-, R-14	50.45256	kg
Methane, trichlorofluoro-, CFC-11	0.000229	kg
Methane, trifluoro-, HFC-23	0.06592	kg
Methanesulfonic acid	0.000279	kg
Methanol	15.6015	kg
Methanol	0.724541	kg
Methanol	12.62998	kg
Methanol	275.7289	kg
Methanol	17.44103	kg
Methanol	266.0174	kg
Methomyl	2.58E-16	kg
Methomyl	2.3E-14	kg
Methomyl	1.49E-12	kg
Methomyl	4.7E-12	kg
Methyl acetate	0.000361	kg
Methyl acetate	0.00015	kg

Appendixes

Methyl acetate	0.001081	kg
Methyl acrylate	0.653028	kg
Methyl acrylate	0.033428	kg
Methyl amine	0.000648	kg
Methyl amine	0.00027	kg
Methyl borate	0.006398	kg
Methyl ethyl ketone	0.000126	kg
Methyl ethyl ketone	16.42911	kg
Methyl formate	0.001396	kg
Methyl formate	0.003498	kg
Methyl formate	8.41E-06	kg
Methyl lactate	0.000591	kg
Methyl parathion	0.000226	kg
Methyl parathion	9.67E-06	kg
Methyl pentane	0.023452	kg
Methylamine	0.000695	kg
Metiram	0.00846	kg
Metolachlor	1.32E-06	kg
Metolachlor	1.78E-08	kg
Metolachlor	0.004615	kg
Metolachlor	0.110852	kg

Appendixes

Metosulam	1.99E-08	kg
Metribuzin	0.001828	kg
Metribuzin	0.038777	kg
Metsulfuron-methyl	0.002667	kg
Mineral oil	9.478348	kg
Molinate	0.000202	kg
Molybdenum	25.32512	kg
Molybdenum	0.392073	kg
Molybdenum	0.149604	kg
Molybdenum	0.286182	kg
Molybdenum	0.148754	kg
Molybdenum	1.042443	kg
Molybdenum	0.110026	kg
Molybdenum	189.5352	kg
Molybdenum	96.25382	kg
Molybdenum	9.917229	kg
Molybdenum	0.19917	kg
Molybdenum-99	2.288958	kBq
Monobutyltin	1.55E-20	kg
Monochloroethane	0.013447	kg
Monocrotophos	0.028873	kg

Appendixes

Monoethanolamine	76.29966	kg
Monoethanolamine	0.002415	kg
Monophenyltin	1.7E-23	kg
Myclobutanil	5.76E-05	kg
Naphtalene	0.000276	kg
Naphtalene	0.000691	kg
Naphthalene	1.21E-05	kg
Napropamide	0.001744	kg
Nickel	51.53325	kg
Nickel	14.50204	kg
Nickel	162.6393	kg
Nickel	1.167521	kg
Nickel	2.75E-06	kg
Nickel	0.62103	kg
Nickel	1.06913	kg
Nickel	3.13883	kg
Nickel	0.032933	kg
Nickel, ion	9.080255	kg
Nickel, ion	8.032299	kg
Nickel, ion	18.99023	kg
Nickel, ion	4441.11	kg

Appendixes

Nickel, ion	0.252851	kg
Nicosulfuron	0.000794	kg
Niobium-95	13.04756	kBq
Niobium-95	12218.64	kBq
Nitrate	10.50698	kg
Nitrate	10.10043	kg
Nitrate	0.018062	kg
Nitrate	24.253	kg
Nitrate	696.4991	kg
Nitrate	19.8205	kg
Nitrate	3042.599	kg
Nitrate	5507.666	kg
Nitrate	25857.41	kg
Nitrate	188.3768	kg
Nitric acid	0.043899	kg
Nitric oxide	0.275642	kg
Nitrite	0.671878	kg
Nitrite	19.21453	kg
Nitrite	541.543	kg
Nitrite	0.207455	kg
Nitrite	60.27128	kg

Appendixes

Nitrobenzene	62.33632	kg
Nitrobenzene	3.47E-05	kg
Nitrobenzene	15.55495	kg
Nitrogen	13.05611	kg
Nitrogen	15010.55	kg
Nitrogen	1495.055	kg
Nitrogen	5.241986	kg
Nitrogen	464.5606	kg
Nitrogen	81.73723	kg
Nitrogen dioxide	0.02914	kg
Nitrogen fluoride	2.54E-09	kg
Nitrogen oxides	454092.1	kg
Nitrogen oxides	33809.1	kg
Nitrogen oxides	18.50935	kg
Nitrogen oxides	356938.9	kg
Nitrogen oxides	46.10792	kg
Nitrogen, organic bound	73.26489	kg
Nitrogen, organic bound	0.423357	kg
Nitrogen, organic bound	577.0079	kg
Nitrogen, organic bound	16261.73	kg
NM VOC, non-methane volatile organic compounds, unspecified origin	16388.42	kg

Appendixes

NMVOC, non-methane volatile organic compounds, unspecified origin	78426.27	kg
NMVOC, non-methane volatile organic compounds, unspecified origin	158547.2	kg
NMVOC, non-methane volatile organic compounds, unspecified origin	0.006825	kg
NMVOC, non-methane volatile organic compounds, unspecified origin	2.166327	kg
Noble gases, radioactive, unspecified	7.92E+08	kBq
Novaluron	7.74E-05	kg
o-Dichlorobenzene	8.91731	kg
o-Nitrotoluene	0.000561	kg
o-Xylene	0.08816	kg
o-Xylene	4.699659	kg
o-Xylene	0.154775	kg
Oils, non-fossil	4.52E-14	kg
Oils, non-fossil	0.852076	kg
Oils, non-fossil	241.4957	kg
Oils, non-fossil	0.002201	kg
Oils, non-fossil	79.13093	kg
Oils, unspecified	2671.548	kg
Oils, unspecified	147.3277	kg
Oils, unspecified	505.6633	kg

Appendixes

Oils, unspecified	84013.83	kg
Oils, unspecified	9302.642	kg
Oils, unspecified	68071.17	kg
Orbencarb	0.044848	kg
Organic carbon	3.272014	kg
Organic carbon	10.64703	kg
Organic carbon	10.64703	kg
Oxamyl	0.011188	kg
Oxydemeton-methyl	8.99E-06	kg
Oxyfluorfen	0.000359	kg
Oxygen	0.033353	kg
Ozone	1.778694	kg
Ozone	260.3733	kg
PAH, polycyclic aromatic hydrocarbons	365.2971	kg
PAH, polycyclic aromatic hydrocarbons	46.08649	kg
PAH, polycyclic aromatic hydrocarbons	39.10559	kg
PAH, polycyclic aromatic hydrocarbons	0.051599	kg
PAH, polycyclic aromatic hydrocarbons	0.051599	kg
PAH, polycyclic aromatic hydrocarbons	1.439363	kg
PAH, polycyclic aromatic hydrocarbons	12.28779	kg
PAH, polycyclic aromatic hydrocarbons	0.29814	kg

Appendixes

Palladium	0.007058	kg
Paraffins	0.020794	kg
Paraquat	0.001176	kg
Paraquat	1.068946	kg
Parathion	3.3E-05	kg
Particulates, < 2.5 um	13788.08	kg
Particulates, < 2.5 um	56344.97	kg
Particulates, < 2.5 um	29047.15	kg
Particulates, < 2.5 um	8659.95	kg
Particulates, < 2.5 um	0.006234	kg
Particulates, > 10 um	23324.32	kg
Particulates, > 10 um	37546.71	kg
Particulates, > 10 um	133159.4	kg
Particulates, > 10 um	21681.36	kg
Particulates, > 2.5 um, and < 10um	18319.9	kg
Particulates, > 2.5 um, and < 10um	56019.49	kg
Particulates, > 2.5 um, and < 10um	35336.16	kg
Particulates, > 2.5 um, and < 10um	13242.91	kg
Pendimethalin	1.48E-11	kg
Pendimethalin	8.83E-09	kg
Pendimethalin	0.01239	kg

Appendixes

Pendimethalin	0.051943	kg
Pentane	17822.4	kg
Pentane	0.823128	kg
Pentane	1871.586	kg
Permethrin	0.000184	kg
Permethrin	0.000421	kg
Pesticides, unspecified	0.846944	kg
Phenanthrene	0.0031	kg
Phenanthrene	0.015192	kg
Phenmedipham	0.000217	kg
Phenol	6.692762	kg
Phenol	23.84386	kg
Phenol	384.5883	kg
Phenol	3.501215	kg
Phenol	21.34545	kg
Phenol	109.0541	kg
Phenol, 2,4-dichloro	0.000834	kg
Phenol, 2,4-dichloro	4.69E-05	kg
Phenol, pentachloro-	0.0003	kg
Phenol, pentachloro-	12.09143	kg
Phenol, pentachloro-	0.004175	kg

Appendixes

Phenol, pentachloro-	0.000137	kg
Phorate	0.020582	kg
Phosgene	3.093086	kg
Phosmet	0.002266	kg
Phosphate	0.010692	kg
Phosphate	12.81661	kg
Phosphate	9364.248	kg
Phosphate	476.0799	kg
Phosphate	86161.02	kg
Phosphine	3.14E-05	kg
Phosphoric acid	4.6E-09	kg
Phosphoric acid	3.95E-06	kg
Phosphorus	0.09809	kg
Phosphorus	0.003978	kg
Phosphorus	11.79167	kg
Phosphorus	0.506014	kg
Phosphorus	0.277207	kg
Phosphorus	2.078707	kg
Phosphorus	153.8827	kg
Phosphorus	13.10448	kg
Phosphorus	60.4663	kg

Appendixes

Phosphorus	139.834	kg
Phosphorus	12.02419	kg
Phosphorus oxychloride	0.000594	kg
Phosphorus trichloride	0.001046	kg
Picloram	1.3E-08	kg
Picoxystrobin	0.387414	kg
Piperonyl butoxide	6.75E-05	kg
Pirimicarb	0.000166	kg
Platinum	0.007056	kg
Platinum	3.09E-05	kg
Platinum	1.06E-05	kg
Platinum	3.34E-09	kg
Plutonium-238	1.12E-05	kBq
Plutonium-alpha	2.57E-05	kBq
Polonium-210	1484.179	kBq
Polonium-210	5.919721	kBq
Polonium-210	1159.362	kBq
Polonium-210	4932.765	kBq
Polonium-210	22268.33	kBq
Polonium-210	135.8993	kBq
Polychlorinated biphenyls	3.57E-05	kg

Appendixes

Polychlorinated biphenyls	0.11864	kg
Polychlorinated biphenyls	0.013815	kg
Polychlorinated biphenyls	0.0059	kg
Potassium	164.5275	kg
Potassium	605.844	kg
Potassium	16.85363	kg
Potassium	3.081333	kg
Potassium	126.5256	kg
Potassium	357.2035	kg
Potassium	336.2667	kg
Potassium	4.788449	kg
Potassium, ion	4.06E-05	kg
Potassium, ion	166492.1	kg
Potassium, ion	13014.71	kg
Potassium, ion	860.6919	kg
Potassium, ion	828.0141	kg
Potassium-40	1863.118	kBq
Potassium-40	91.84212	kBq
Potassium-40	0.470213	kBq
Potassium-40	750.8969	kBq
Potassium-40	4246.622	kBq

Appendixes

Potassium-40	18.29643	kBq
Primisulfuron	2.01E-05	kg
Prochloraz	2.14E-05	kg
Procymidone	1.86E-05	kg
Profenofos	0.049446	kg
Prohexadione-calcium	7.84E-09	kg
Propamocarb HCl	9.88E-05	kg
Propanal	0.000945	kg
Propanal	0.386306	kg
Propanal	0.012272	kg
Propanal	0.000456	kg
Propane	156.7174	kg
Propane	606.8626	kg
Propane	1.215265	kg
Propanil	0.000523	kg
Propanol	0.001155	kg
Propanol	3.03E-08	kg
Propanol	0.004325	kg
Propargite	0.006602	kg
Propene	208.0726	kg
Propene	105.0493	kg

Appendixes

Propene	8.462035	kg
Propene	1.126104	kg
Propiconazole	-3.4E-10	kg
Propiconazole	0.000216	kg
Propiconazole	1.24E-05	kg
Propiconazole	-3.2E-14	kg
Propionic acid	0.007258	kg
Propionic acid	0.388863	kg
Propionic acid	1.850293	kg
Propionic acid	0.000473	kg
Propoxycarbazone-sodium (prop)	4.35E-08	kg
Propylamine	0.000356	kg
Propylamine	0.000148	kg
Propylene oxide	1.841095	kg
Propylene oxide	1.122989	kg
Prosulfuron	3.64E-06	kg
Protactinium-234	639.4112	kBq
Protactinium-234	233.9472	kBq
Prothioconazol	6.12E-17	kg
Prothioconazol	3.91E-15	kg
Prothioconazol	3.8E-14	kg

Appendixes

Prothioconazol	0.462621	kg
Pymetrozine	0.000632	kg
Pyraclostrobin	2.07E-12	kg
Pyraclostrobin	1.31E-10	kg
Pyraclostrobin	0.000509	kg
Pyraclostrobin (prop)	0.392027	kg
Pyraflufen-ethyl	0.044518	kg
Pyrene	0.002815	kg
Pyrene	0.000793	kg
Quinclorac	8.73E-06	kg
Quinmerac	4.98E-28	kg
Quinoxifen	3.8E-07	kg
Quintozene	0.01236	kg
Quizalofop ethyl ester	5.31E-06	kg
Quizalofop-ethyl	6.83E-05	kg
Quizalofop-P	2.68E-06	kg
Quizalofop-p-ethyl	8.31E-29	kg
Radioactive species, alpha emitters	21.42711	kBq
Radioactive species, Nuclides, unspecified	575.2853	kBq
Radioactive species, Nuclides, unspecified	79936.88	kBq
Radioactive species, other beta emitters	0.472689	kBq

Appendixes

Radioactive species, other beta emitters	6097.498	kBq
Radioactive species, other beta emitters	4.54E-07	kBq
Radium-224	2760.144	kBq
Radium-224	60524.14	kBq
Radium-226	5298.789	kBq
Radium-226	4.363691	kBq
Radium-226	696.7363	kBq
Radium-226	4259.549	kBq
Radium-226	19.1953	kBq
Radium-226	238.5394	kBq
Radium-226	308836.1	kBq
Radium-226	5271.673	kBq
Radium-228	7443.23	kBq
Radium-228	2793.891	kBq
Radium-228	1099.992	kBq
Radium-228	5.737471	kBq
Radium-228	5520.288	kBq
Radium-228	121048.3	kBq
Radon-220	3972.235	kBq
Radon-220	97420.98	kBq
Radon-220	398.5906	kBq

Appendixes

Radon-222	2.89E+09	kBq
Radon-222	81250818	kBq
Radon-222	2255.249	kBq
Radon-222	223.8686	kBq
Rhodium	0.007056	kg
Rimsulfuron	0.000323	kg
Rubidium	0.552029	kg
Rubidium	12.10483	kg
Ruthenium-103	0.935306	kBq
Ruthenium-103	0.000495	kBq
Scandium	0.001015	kg
Scandium	0.270158	kg
Scandium	0.053119	kg
Scandium	1.78E-06	kg
Scandium	0.276015	kg
Scandium	234.8895	kg
Scandium	5.968958	kg
Scandium	0.797878	kg
Selenium	1.554107	kg
Selenium	0.625818	kg
Selenium	0.039261	kg

Appendixes

Selenium	7.684829	kg
Selenium	3.95E-07	kg
Selenium	0.49549	kg
Selenium	0.09639	kg
Selenium	101.6886	kg
Selenium	15.30396	kg
Selenium	1.342475	kg
Selenium	0.44754	kg
Sethoxydim	0.000147	kg
Sethoxydim	0.000282	kg
Silicon	0.129872	kg
Silicon	163.4185	kg
Silicon	685.3132	kg
Silicon	82.89845	kg
Silicon	17.35731	kg
Silicon	2609.044	kg
Silicon	661.5259	kg
Silicon	701.2764	kg
Silicon	2057.222	kg
Silicon	1118115	kg
Silicon	815.4856	kg

Appendixes

Silicon tetrafluoride	0.012176	kg
Silthiofam	5.84E-07	kg
Silver	0.000484	kg
Silver	0.009977	kg
Silver	0.011827	kg
Silver	0.000889	kg
Silver	0.041117	kg
Silver	0.007972	kg
Silver	1.21E-10	kg
Silver, ion	8.375268	kg
Silver, ion	0.735515	kg
Silver, ion	219.11	kg
Silver, ion	0.08968	kg
Silver, ion	0.033122	kg
Silver-110	1731.261	kBq
Silver-110	0.009896	kBq
Simazine	0.000407	kg
Sodium	0.325967	kg
Sodium	30.26832	kg
Sodium	87.63853	kg
Sodium	9.584939	kg

Appendixes

Sodium	4.391211	kg
Sodium	1895657	kg
Sodium	1487.274	kg
Sodium	8.517904	kg
Sodium chlorate	0.142014	kg
Sodium dichromate	0.034911	kg
Sodium formate	0.024465	kg
Sodium formate	0.010184	kg
Sodium hydroxide	0.032497	kg
Sodium hydroxide	-5.2E-10	kg
Sodium tetrahydridoborate	1.69E-06	kg
Sodium, ion	438740.5	kg
Sodium, ion	345717.5	kg
Sodium, ion	2415.91	kg
Sodium, ion	33357.93	kg
Sodium, ion	53114	kg
Sodium-24	33.15614	kBq
Solids, inorganic	564.1764	kg
Solids, inorganic	16439.06	kg
Solids, inorganic	14038.23	kg
Solids, inorganic	1.31E-15	kg

Appendixes

Spinosad	1.32E-05	kg
Spiroxamine	8.66E-05	kg
Strontium	217.8814	kg
Strontium	1.320603	kg
Strontium	8.58854	kg
Strontium	0.464214	kg
Strontium	11.39255	kg
Strontium	10.2703	kg
Strontium	11.65872	kg
Strontium	0.037766	kg
Strontium	2218.039	kg
Strontium	9837.186	kg
Strontium	156.8882	kg
Strontium	119.7915	kg
Strontium-89	44.26233	kBq
Strontium-90	41724.75	kBq
Strontium-90	1703.417	kBq
Styrene	6.579653	kg
Styrene	620.0449	kg
Styrene	28.00961	kg
Sulfate	8240.714	kg

Appendixes

Sulfate	4825.889	kg
Sulfate	676.6731	kg
Sulfate	87.36106	kg
Sulfate	91.34213	kg
Sulfate	2.057624	kg
Sulfate	33.10279	kg
Sulfate	61856.64	kg
Sulfate	1965305	kg
Sulfate	114133.6	kg
Sulfate, ion	0.365461	kg
Sulfate, ion	33.08876	kg
Sulfentrazone	0.001407	kg
Sulfentrazone	0.755507	kg
Sulfide	4.300844	kg
Sulfide	0.017272	kg
Sulfide	6.552458	kg
Sulfite	0.00018	kg
Sulfite	23.41353	kg
Sulfosate	0.022879	kg
Sulfosulfuron	1.64E-07	kg
Sulfur	28.18865	kg

Appendixes

Sulfur	0.588567	kg
Sulfur	156.8679	kg
Sulfur	555.1232	kg
Sulfur	14242.84	kg
Sulfur	250.9358	kg
Sulfur	28.99384	kg
Sulfur dioxide	47874.46	kg
Sulfur dioxide	375146.4	kg
Sulfur dioxide	67915.02	kg
Sulfur dioxide	0.033127	kg
Sulfur dioxide	65.69883	kg
Sulfur hexafluoride	7.458944	kg
Sulfur hexafluoride	1.02E-08	kg
Sulfur oxides	1613.167	kg
Sulfur trioxide	17.13108	kg
Sulfur trioxide	34.15381	kg
Sulfuric acid	3.990972	kg
Sulfuric acid	0.00933	kg
Sulfuric acid	1.57E-05	kg
Sulfuric acid	27.25522	kg
Sulfuric acid	2.362707	kg

Appendixes

Sulfuric acid	851.4307	kg
Suspended solids, unspecified	8591.41	kg
Suspended solids, unspecified	6752.978	kg
Suspended solids, unspecified	10687.9	kg
t-Butyl methyl ether	0.000764	kg
t-Butyl methyl ether	2.013557	kg
t-Butyl methyl ether	0.214715	kg
t-Butylamine	0.00131	kg
t-Butylamine	0.000546	kg
tau-Fluvalinate	7.95E-30	kg
TCMTB	0.191907	kg
Tebuconazole	3.13E-14	kg
Tebuconazole	1.01E-13	kg
Tebuconazole	0.012478	kg
Tebuconazole	7.53E-17	kg
Tebupirimphos	0.000169	kg
Tebutam	0.006824	kg
Technetium-99m	56.8537	kBq
Teflubenzuron	0.198144	kg
Tefluthrin	3.8E-16	kg
Tefluthrin	2.28E-14	kg

Appendixes

Tefluthrin	4.66E-09	kg
Tefluthrin	0.000133	kg
Tellurium	0.011694	kg
Tellurium-123m	6.973471	kBq
Tellurium-132	0.266209	kBq
Terbufos	0.000451	kg
Terbutylazin	0.025104	kg
Terpenes	1.627708	kg
Tetramethyl ammonium hydroxide	6.1E-05	kg
Thallium	0.009496	kg
Thallium	0.023702	kg
Thallium	0.54507	kg
Thallium	0.067279	kg
Thallium	0.00548	kg
Thallium	0.00129	kg
Thallium	0.01698	kg
Thallium	0.035783	kg
Thallium	107.8134	kg
Thallium	0.053378	kg
Thallium	0.02124	kg
Thiamethoxam	0.941237	kg

Appendixes

Thifensulfuron	2E-05	kg
Thifensulfuron-methyl	1.16E-06	kg
Thiobencarb	0.000112	kg
Thiocyanate, ion	0.005333	kg
Thiodicarb	7.15E-05	kg
Thiodicarb	0.115999	kg
Thiophanate-methyl	0.305114	kg
Thiram	0.003166	kg
Thorium	0.079236	kg
Thorium	0.000273	kg
Thorium	0.031615	kg
Thorium	5.5E-06	kg
Thorium-228	0.047696	kBq
Thorium-228	262.5646	kBq
Thorium-228	614.3993	kBq
Thorium-228	3.071696	kBq
Thorium-228	11041.42	kBq
Thorium-228	242096.6	kBq
Thorium-230	319.5205	kBq
Thorium-230	54135.98	kBq
Thorium-232	52.84298	kBq

Appendixes

Thorium-232	347.3609	kBq
Thorium-232	195.3585	kBq
Thorium-232	898.0725	kBq
Thorium-232	4.813654	kBq
Thorium-232	1207.01	kBq
Thorium-234	639.8209	kBq
Thorium-234	233.9856	kBq
Tin	30.20116	kg
Tin	0.06597	kg
Tin	5.334821	kg
Tin	0.090639	kg
Tin	0.194149	kg
Tin	2.238955	kg
Tin	0.128727	kg
Tin, ion	0.546899	kg
Tin, ion	400.0351	kg
Tin, ion	0.276	kg
Tin, ion	3.91E-20	kg
Tin, ion	0.322965	kg
Titanium	9.936381	kg
Titanium	17.98345	kg

Appendixes

Titanium	6.93087	kg
Titanium	1.063693	kg
Titanium	97.46708	kg
Titanium	52.92888	kg
Titanium	8.514644	kg
Titanium, ion	20.91391	kg
Titanium, ion	0.021362	kg
Titanium, ion	38.83116	kg
Titanium, ion	26699.82	kg
Titanium, ion	5.842628	kg
TOC, Total Organic Carbon	70453.51	kg
TOC, Total Organic Carbon	3392071	kg
TOC, Total Organic Carbon	1686.965	kg
TOC, Total Organic Carbon	8310.478	kg
TOC, Total Organic Carbon	1500.51	kg
Toluene	429.4949	kg
Toluene	260.999	kg
Toluene	154.7794	kg
Toluene	14.88506	kg
Toluene	130.9327	kg
Toluene	6.34644	kg

Appendixes

Toluene, 2-chloro	0.010485	kg
Toluene, 2-chloro	0.004953	kg
Tralkoxydim	-2.3E-05	kg
Triadimenol	4.75E-06	kg
Triallate	3.52E-07	kg
Triasulfuron	1.04E-07	kg
Tribenuron	4.85E-07	kg
Tribenuron-methyl	7.48E-08	kg
Tributyltin compounds	0.048808	kg
Trichlorfon	0.037094	kg
Trichloroethylene	0.013484	kg
Triclopyr	0.031234	kg
Triethylene glycol	0.807552	kg
Triethylene glycol	0.017093	kg
Triethylene glycol	0.014731	kg
Trifloxystrobin	1.88E-17	kg
Trifloxystrobin	1.16E-15	kg
Trifloxystrobin	1.28E-05	kg
Trifloxystrobin	0.402546	kg
Trifluralin	0.020261	kg
Trifluralin	0.101162	kg

Appendixes

Trimethylamine	0.000756	kg
Trimethylamine	0.000315	kg
Trinexapac-ethyl	2.11E-05	kg
Trioctyltin	4.01E-21	kg
Triphenyltin	1.7E-21	kg
Tungsten	6.68E-05	kg
Tungsten	0.030522	kg
Tungsten	214.7339	kg
Tungsten	102.0653	kg
Tungsten	0.872549	kg
Uranium	0.105338	kg
Uranium	0.000174	kg
Uranium	0.000316	kg
Uranium	8.71E-06	kg
Uranium alpha	24947.58	kBq
Uranium alpha	1504.865	kBq
Uranium-234	699.6546	kBq
Uranium-234	740.0588	kBq
Uranium-235	13.21121	kBq
Uranium-235	825.7394	kBq
Uranium-238	19.50969	kBq

Appendixes

Uranium-238	389.8292	kBq
Uranium-238	1.995933	kBq
Uranium-238	580.2175	kBq
Uranium-238	3176.686	kBq
Uranium-238	15.99617	kBq
Uranium-238	3.196428	kBq
Uranium-238	2217.027	kBq
Urea	0.000158	kg
Urea	0.001421	kg
Vanadium	70.60631	kg
Vanadium	31.96398	kg
Vanadium	0.66283	kg
Vanadium	6.349277	kg
Vanadium	2.128249	kg
Vanadium	11.55699	kg
Vanadium	0.243716	kg
Vanadium, ion	16.97082	kg
Vanadium, ion	5161.216	kg
Vanadium, ion	0.55284	kg
Vanadium, ion	0.323278	kg
Vinclozolin	6.21E-06	kg

Appendixes

VOC, volatile organic compounds, unspecified origin	0.022993	kg
VOC, volatile organic compounds, unspecified origin	235.481	kg
VOC, volatile organic compounds, unspecified origin	19.32101	kg
VOC, volatile organic compounds, unspecified origin	425.04	kg
Water	940854	m3
Water	19845.7	m3
Water	10511.12	m3
Water	0.000302	m3
Water	309.3291	m3
Water	4.79E+08	m3
Water	117474.2	m3
Water	75800.37	m3
Water	40117.99	m3
Xenon-131m	40923.81	kBq
Xenon-133	2456827	kBq
Xenon-133m	1553.524	kBq
Xenon-135	859878.2	kBq
Xenon-135m	374712.4	kBq
Xenon-137	11787.21	kBq
Xenon-138	88012.4	kBq
Xylene	3.209687	kg

Appendixes

Xylene	249.8416	kg
Xylene	20.63814	kg
Xylene	135.8773	kg
Xylene	14.11222	kg
Xylene	113.801	kg
Zeta-cypermethrin	8.45E-05	kg
Zeta-cypermethrin	3.62E-06	kg
Zinc	205.1399	kg
Zinc	43.28336	kg
Zinc	73.13783	kg
Zinc	2.83608	kg
Zinc	0.000395	kg
Zinc	14.9271	kg
Zinc	99.31348	kg
Zinc	85.18646	kg
Zinc	-0.24814	kg
Zinc, ion	149.3493	kg
Zinc, ion	534.5181	kg
Zinc, ion	27.98088	kg
Zinc, ion	15017.8	kg
Zinc, ion	133.0219	kg

Appendixes

Zinc-65	1017.072	kBq
Zinc-65	0.094775	kBq
Zirconium	0.031783	kg
Zirconium-95	4986.815	kBq
Zirconium-95	0.184781	kBq