

# COMMUNICATION

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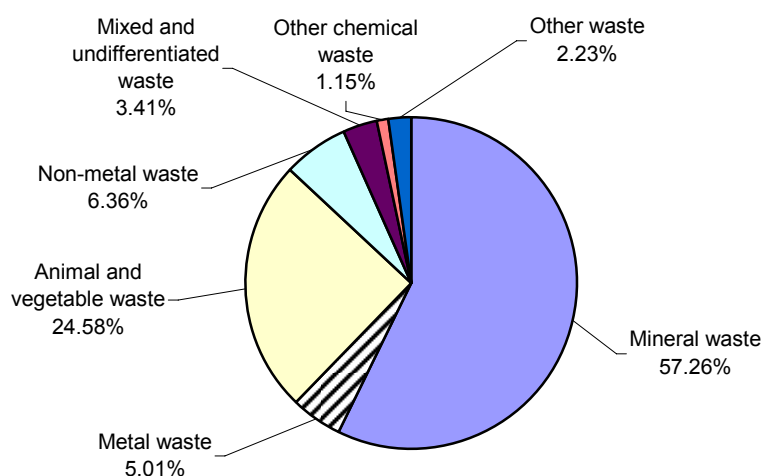
## Industrial waste in Republic of Serbia, 2009

The communication presents selected statistical data on waste quantities generated by industry, carried to landfills in 2009.

Of the total amount of 28 553 539 tons of waste generated by industry, the sections Mining and quarrying generated 21 098 339 tons (52.9% and 47.1% of non-hazardous and hazardous waste respectively), Manufacturing 1 252 760 tons (97.8% and 2.2% of non-hazardous and hazardous waste respectively) and Electricity, gas, steam and air conditioning supply 6 201 911 tons (99.9% and 0.1% of non-hazardous and hazardous waste respectively).

The most commonly generated waste in all three sections of industry is that of mineral origin accounting for 99.98% in Mining and quarrying, 99.80% in Electricity, gas, steam and air conditioning supply, and 57.25% in Manufacturing. The section of Manufacturing has a very heterogeneous structure, and besides the prevailing mineral waste, it generates 24.6% of animal and vegetable waste, 6.4% of non-metal waste, 5.0% of metal waste, 3.4% of mixed waste, 1.2% of other chemical waste, and 3.4% of other types of waste.

Structure of generated waste in manufacturing industry, 2009



### *In the section of Manufacturing:*

Non-metal waste is most commonly generated by the manufacture of wood, products of wood, cork, straw and plaiting materials, except furniture and accounts for 88.3% of waste, then by the manufacture of paper, paper products, printing and reproduction of recorded media (53.3%), manufacture of furniture, other manufacturing, repair and installation of machinery and equipment (43.5%), manufacture of textiles, wearing apparel, leather and related products (39.6%) and manufacture of chemicals, chemical products, basic pharmaceutical products and pharmaceutical preparations, rubber and plastic products (28.8%).

Animal and vegetable waste prevails in the manufacture of food, beverages and tobacco products (84.0%).

Mineral waste prevails in the manufacture of other non-metallic mineral products amounting to (81.9%) and manufacture of basic metals, fabricated metal products, except machinery and equipment (93.0%).

Metal waste prevails in the manufacture of computer, electronic and optical products, electrical equipment, machinery and equipment n.e.c, motor vehicles, trailers and semi-trailers and other transport equipment (37.9%).

Chemical waste is most common in the manufacture of coke and petroleum derivatives (41.7%).

## 1. Waste generated by industry activities, 2009

	2008 <sup>1)</sup>	Waste generated, tons	
		Total <sup>2)</sup>	of which: hazardous waste
<b>Republic of Serbia</b>	<b>22 575 626</b>	<b>28 553 539</b>	<b>9 971 948</b>
<b>Mining and quarrying</b>	<b>15 009 969</b>	<b>21 098 339</b>	<b>9 943 964</b>
<b>Manufacturing industry</b>	<b>1 862 939</b>	<b>1 252 760</b>	<b>27 312</b>
Manufacture of food products, Manufacture of beverages; Manufacture of tobacco products	334 451	364 553	364
Manufacture of textiles; Manufacture of wearing apparel, Manufacture of leather and leather products,	4 202	3 078	529
Manufacture of wood and products of wood and cork, except furniture; Manufacture of articles of straw and plaiting materials	18 716	21 606	819
Manufacture of paper and paper products, Printing and reproduction of recorded media	23 844	24 183	1 331
Manufacture of coke and refined petroleum products	2 214	2 360	1 485
Manufacture of chemicals and chemical products, Manufacture of basic pharmaceutical products and pharmaceutical preparations, Manufacture of rubber and plastic products	33 587	37 257	9 114
Manufacture of other non- metallic mineral products	55 400	58 582	215
Manufacture of basic metals, Manufacture of metal products, except machinery and equipment	1 288 738	687 902	6 957
Manufacture of furniture, Other manufacturing, Repair and installation of machinery and equipment	8 795	6 235	811
Other manufacturing industrial activities	92 991	47 004	5 687
<b>Electricity, gas, steam and air conditioning supply</b>	<b>5 699 875</b>	<b>6 201 911</b>	<b>668</b>

<sup>1)</sup> Included is the publishing industry, which generated 2 844 tons of waste of which 20 tons of hazardous.

<sup>2)</sup> Included is the publishing industry, which generated 529 tons of waste of which 4 tons of hazardous.

## 2. Waste generated by EWC-Stat, 2009

EWC-Stat <sup>2)</sup>	Character of waste <sup>1)</sup>	2008	Waste generated, tons				
			Total	Mining and quarrying	Manufacturing industry	Electricity, gas, steam and air conditioning supply	
<b>Total</b>		<b>22 575 626</b>	<b>28 553 539</b>	<b>21 098 339</b>	<b>1 252 760</b>	<b>6 201 911</b>	
<b>Non hazardous</b>		<b>14 342 541</b>	<b>18 581 591</b>	<b>11 154 375</b>	<b>1 225 448</b>	<b>6 201 243</b>	
<b>Hazardous</b>		<b>8 233 085</b>	<b>9 971 948</b>	<b>9 943 964</b>	<b>27 312</b>	<b>668</b>	
01.1	Spent solvents	H	17	26	-	26	-
01.2	Acid, alkaline or saline wastes	N	7	57	-	57	-
01.2	Acid, alkaline or saline wastes	H	7 472	3 597	-	3 594	-
01.3	Used oils	H	3 819	4 811	116	4 486	208
01.4	Spent chemical catalysts	N	-	1	-	1	-
01.4	Spent chemical catalysts	H	110	2	-	2	-
02	Chemical preparation wastes	N	4 329	5 506	-	5 505	-
02	Chemical preparation wastes	H	1 105	850	-	842	8
03.1	Chemical deposits and residues	N	5 530	6 289	2 592	3 664	33
03.1	Chemical deposits and residues	H	2 467	1 685	32	1 453	200
03.2	Industrial effluent sludges wet	N	65 566	3 512	-	3 512	-
03.2	Industrial effluent sludges wet	H	5 026	5 838	-	5 823	16
05	Health care and biological wastes	N	1	4	-	4	-
05	Health care and biological wastes	H	0	1	-	1	-
06	Metallic wastes	N	256 988	74 544	1 188	62 707	10 628
06	Metallic wastes	H	37	11	-	1	10
07.1	Glass wastes	N	15 641	12 935	-	12 935	-
07.1	Glass wastes	H	-	4	-	4	-
07.2	Paper and cardboard wastes	N	32 415	24 709	6	24 222	20
07.3	Rubber wastes	N	747	848	438	390	20
07.4	Plastic wastes	N	8 949	8 552	2	8 544	5
07.5	Wood wastes	N	28 913	31 280	309	30 615	354
07.5	Wood wastes	H	5 142	1 712	-	1 709	3
07.6	Textile wastes	N	1 931	1 251	-	1 251	-
07.7	Waste containing PSB	H	1 130	64	1	43	20
08	Discarded equipment (excluding 08.1 and 08.41)	N	579	339	33	232	74
08	Discarded equipment (excluding 08.1 and 08.41)	H	170	104	-	80	25
08.1	Discarded vehicles	N	44	49	12	20	17
08.1	Discarded vehicles	H	304	243	185	55	3
08.41	Batteries and accumulators wastes	N	23	14	-	12	2
08.41	Batteries and accumulators wastes	H	5 607	3 261	6	3 237	18
09	Animal and vegetal wastes (excluding 09.11 and 09.03)	N	220 905	272 736	6	272 730	-
09.11	Animal waste of food preparation and other products	N	20 988	18 480	-	18 480	-
09.3	Animal faeces, urine and manure	N	141	16 687	-	16 687	-
10.1	Household and similar wastes	N	33 152	29 267	139	28 942	180
10.2	Mixed and undifferentiated materials	N	3 326	4 546	41	4 102	399
10.2	Mixed and undifferentiated materials	H	48	23	-	23	-
10.3	Sorting residues	N	7 593	8 654	-	8 621	2
10.3	Sorting residues	H	1 069	1 068	-	1 068	-
11	Common sludges, wet (excluding 11.3)	N	6 610	9 819	-	9 819	-
11.3	Dredging spoils	N	103	-	-	-	-
12.1-12.5	Mineral wastes (excluding 12.4 and 12.6)	N	7 199 779	11 428 834	11 123 331	305 116	387
12.1-12.5	Mineral wastes (excluding 12.4 and 12.6)	H	8 195 507	9 946 232	9 943 624	2 450	158
12.4	Combustion wastes	N	6 428 283	6 622 678	26 277	407 280	6 189 121
12.4	Combustion wastes	H	4 053	2 369	-	2 369	-
12.6	Contaminated soils and dredging spoils	H	-	46	-	46	-
13	Salified, stabilized or vitrified wastes	N	-	-	-	-	-
13	Salified, stabilized or vitrified wastes	H	2	2	-	2	-

<sup>1)</sup> H - Hazardous / N - Non hazardous.

<sup>2)</sup> According to Annex I (Section 2) of Regulation (EC) No 2150/2002.

### 3. Waste generated by List of Waste, 2009

	2008	Generated industrial waste		Taken to the landfill		Exported abroad	
		total	of which: hazardous	total	of which: hazardous	total	of which: hazardous
<b>TOTAL, tons</b>	<b>22 575 626</b>	<b>28 553 539</b>	<b>9 971 948</b>	<b>136 817</b>	<b>2 696</b>	<b>13 085</b>	<b>1 634</b>
1 Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals	14 974 100	21 065 935	9 943 624	1 373	-	-	-
2 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	276 911	318 195	-	52 652	-	400	-
3 Wastes from wood processing and the production of panels and furniture	34 255	38 737	1 626	6 369	337	-	-
4 Wastes from the leather, fur and textile industries	1 905	1 130	81	631	-	-	-
5 Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	2 120	3 810	1 087	-	-	-	-
6 Wastes from inorganic chemical processes	11 879	9 021	7 484	124	53	-	-
7 Wastes from organic chemical processes	4 423	3 508	337	346	2	180	169
8 Wastes from manufacture, formulation, supply and use (mfsu) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	1 022	509	393	123	117	17	17
9 Wastes from photographic industry	93	1 165	1 117	1	-	-	-
10 Wastes from thermal processes	7 042 663	6 929 035	3 592	43 413	1 120	10 786	-
11 Wastes from chemical surface treatment and coating of metals and other materials; non – ferrous hydrometallurgy	594	903	653	14	14	-	-
12 Wastes from shaping and physical and mechanical surface treatment of metal and plastics	41 261	35 680	2 249	1 068	6	1 502	1 331
13 Oil wastes and wastes from liquid fuels (except edible oils, and those in chapters 05, 12 and 19)	2 829	2 752	2 752	22	22	7	7
14 Waste organic solvents, refrigerants and propellants (except 07 and 08)	7	8	8	1	1	-	-
15 Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	52 235	37 359	286	1 820	34	100	26
16 Wastes not otherwise specified in the list	16 653	11 406	3 707	104	31	53	53
17 Construction and demolition wastes (including excavated soil from contaminated sites)	53 724	37 211	1 425	1 718	959	-	-
18 Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	22	13	1	-	-	8	-
19 Wastes from management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	12 434	15 720	1 421	3 495	-	32	31
20 Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	46 497	41 444	106	23 545	-	-	-

## Explanatory notes

Industrial waste data for 2009 were collected in regular statistical survey. The survey covers all enterprises with 10 and more employees, which principal activity is defined in sections B – Mining and quarrying, C – Manufacturing, D – Electricity, gas, steam and air conditioning supply, i.e. in sections from 05 to 35 of the Classification of Activities.

Data are collected by reporting method and regarding the geographical aspect, the survey encompasses enterprises that perform their activities on the whole territory of the Republic of Serbia. Starting from 1999, the Statistical Office of the Republic of Serbia does not have available certain data for AP Kosovo and Metohia, and thus are not included in the data for the Republic of Serbia (total).

The displayed information includes estimates for enterprises that have not submitted a report for the year, which according to the above criteria belong to the industry.

Data have been collected on the basis of the Waste Catalogue<sup>1)</sup>, which is in conformity with the European List of Waste (LoW)<sup>2)</sup> and which contains a list of more than 800 types of waste being classified according to the characteristics and origin of waste site in twenty chapters. Of these 20 chapters most of them are industry-based but some are based on materials and processes. The information is published according to the Waste Catalogue and (EWC-Stat)<sup>3)</sup> Statistical list of waste).

While creating the EWC-Stat list, the table of codes' equivalence has been used so as to provide clear relation with the Waste Catalogue. EWC-Stat list is used because statisticians have realized that the European List of Waste (LoW), which is the legal foundation of European control and supervision of waste, cannot be utilized for statistical purposes.

**Waste** refers here to materials that are not prime products (i.e. products produced for the market) for which the generator has no further use for own purpose of production, transformation or consumption, and which he discards, or intends or is required to discard.

**Hazardous waste** is waste, which by its origin, composition or concentration of hazardous materials, can cause danger to environment and human health and has at least one of the hazardous characteristics regulated by law, including its packaging.

**Non hazardous waste** is the waste that has no characteristics of hazardous waste.

**Landfill** is a waste disposal site above or under the ground, including: internal disposal sites (landfill where the manufacturer discard its own waste in the place where it has been generated), permanent sites (more than one year) used for temporary waste storage, other than transfer stations and waste storages prior to treatment or reuse (period under three years) or waste storage prior to disposal (period under one year).

Changes in data for 2008, compared to the Statistical Release ZS60 of 30.06.2010, have occurred as a result of changes in methodology and the largest are noted in the sector of Mining and quarrying of the mineral waste as the most dominant waste in this sector.

<sup>1)</sup> Law about condition and way of selection, packaging and storage raw secondary materials ("Official Gazette RS" number 55/2001).

<sup>2)</sup> European List of Waste.

<sup>3)</sup> According to Annex I (Section 2) of Regulation (EC) No 2150/2002.