

CORINAIR 1990 SUMMARY OF EMISSIONS

This section presents a summary of the emissions reported for each SNAP activity (SNAP90 nomenclature) and the eight main pollutants in the CORINAIR 1990 inventory.

The tables present:

- A main summary for the 28 countries presenting total emissions and percent contributions from the 11 main source groups for each pollutant, then
- On the left hand pages, the total emissions from 28 European countries per activity and pollutant and
- On the right hand pages, the percent contribution of each activity to the overall totals for each pollutant.

The 28 countries included are as follows: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom; Norway, Switzerland; Bulgaria, Czech Republic, Estonia, Hungary, Latvia Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.

These summary tables have been prepared in September 1995. More detailed data and additional background information is available in 3 EEA (ETC/AE) Topic reports:

- CORINAIR 90 : Summary Report no 1 (Sectors), *Topic Report 7 (1996)*;
- CORINAIR 90 : Summary Report no 2 (Sub-sectors) , *Topic Report 8 (1996)*;
- CORINAIR 90 : Summary Report no 3 (Large Point Sources), *Topic Report no. 20 (1996)*

It should be noted that the results presented here are for activities as listed under SNAP90 codes. The guidebook is presented on the basis of SNAP97 codes and some differences occur (see also the section on CORINAIR nomenclatures in this Guidebook).

The emission estimates provided here have in various cases been revised afterwards reflecting improved methodologies or activity statistics (e.g. energy statistics). However for comparisons between countries and between detailed source sectors the 1990 inventories (dated 1995) are still useful and have therefore been incorporated, unchanged from the tables in the first edition of the guidebook. The results presented here have also been incorporated in various chapters of the guidebook.

Emission estimates for more recent years are available in: the section on CORINAIR96 in this Guidebook, the EEA *Topic Report no. 8 (1997)* "Corinair94 inventory" and on the following Internet sites, also including time series of emission estimates:

- EEA Internet site (<http://www.eea.eu.int>), under EEA Data Warehouse
- European Topic Centre on Air Emissions (ETC/AE) (<http://etc-ae.eionet.eu.int/etc-ae/index.htm>)
- EMEP (<http://www.emep.int/index.html>)

CORINAIR90 summary (Feb. 1995)

Europe (28 countries)	SO₂	NO_x as NO₂	NMVOC	CH₄	CO	CO₂	N₂O	NH₃
1 public power, cogeneration and district heating	14947500	3758590	55023	42999	807111	1332194000	96939	1405
2 commercial, institutional and residential combustion	3045695	753956	989439	618669	9946611	849641000	44921	2491
3 industrial combustion	6967997	2438689	154014	92168	8200489	1140657000	53809	1357
4 production processes	922703	391759	1220294	75893	3187774	179916000	355672	172331
5 extraction and distribution of fossil fuels	45111	82174	1376403	10408375	62851	27048000	83	0
6 solvent use	301	900	4920258	20	960	379000	0	107
7 road transport	718230	7846112	6765744	200037	38919349	695497000	29886	13351
8 other mobile sources and machinery	565032	2309640	676573	25287	2223182	138733000	6269	225
9 waste treatment and disposal	86557	241094	506961	8752435	4426583	83173000	13366	127851
10 agriculture	1402	49621	758756	14793437	579196	22450000	726021	5266873
11 nature	573037	50013	4347357	10405808	1358327	294778000	552718	114992
Total in tonnes	27873565	17922548	21770822	45415128	69712433	4764466000	1879684	5700983
Total (excluding nature), kg per capita	56	37	36	72	140	9166	3	11

Percentages

Europe (28 countries)	SO₂	NO_x as NO₂	NMVOC	CH₄	CO	CO₂	N₂O	NH₃
1 public power, cogeneration and district heating	54	21	0	0	1	28	5	0
2 commercial, institutional and residential combustion	11	4	5	1	14	18	2	0
3 industrial combustion	25	14	1	0	12	24	3	0
4 production processes	3	2	6	0	5	4	19	3
5 extraction and distribution of fossil fuels	0	0	6	23	0	1	0	0
6 solvent use	0	0	23	0	0	0	0	0
7 road transport	3	44	31	0	56	15	2	0
8 other mobile sources and machinery	2	13	3	0	3	3	0	0
9 waste treatment and disposal	0	1	2	19	6	2	1	2
10 agriculture	0	0	3	33	1	0	39	92
11 nature	2	0	20	23	2	6	29	2

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap90 Code	Description	SO ₂	NO _x as NO ₂	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 1	PUBLIC POWER, COGENERATION AND DISTRICT HEATING								
10100	Public power and cogeneration plants								
10101	Combustion plants > = 300 mw	13691	3316	41	33	650	1160	84	1
10102	Combustion plants > = 50 and < 300 mw	385	161	2	2	25	58	5	
10103	Combustion plants < 50 mw	110	29	1	1	8	19	2	
10104	Gas turbines	8	38			11	10		
10105	Stationary engines	25	28	1		6	1		
10200	District heating plants								
10201	Combustion plants > = 300 mw	129	46	1	1	6	19	2	
10202	Combustion plants > = 50 mw and < 300 mw	326	67	2	2	23	27	3	
10203	Combustion plants < 50 mw	272	69	5	4	80	36	2	
10204	Gas turbines		2			1	1		
10205	Stationary engines		2						
GROUP 2	COMMERCIAL, INSTITUTIONAL & RESIDENTIAL COMBUSTION								
	(now further subdivided)								
20001	Combustion plants > = 50 mw	163	44	15	3	20	19	2	1
20002	Combustion plants < 50 mw	2865	708	973	615	9916	829	43	1
20003	Gas turbines								
20004	Stationary engines	18	2	1	1	11	2		
GROUP 3	INDUSTRIAL COMBUSTION								
30100	Ind. Combust. In boilers, gas turbines & station. Engines	19	23	3	1	6	8	1	
30101	Plants > = 300 mw	1782	431	5	5	214	179	11	
30102	Plants > = 50 mw and < 300 mw	1236	274	9	7	586	180	6	
30103	Plants < 50 mw	2309	571	31	23	654	358	18	
30104	Gas turbines	1	35	1	3	13	14		
30105	Stationary engines	14	31	3		10	5		
30200	Process furnaces without contact	12	4			1	1		
30201	Refinery processes furnaces (now 10306)	380	89	40	4	44	47	4	
30202	Coke oven furnaces (now 10406)	130	53	5	3	155	50		
30203	Blast furnaces cowpers	14	37	1	3	1136	62	1	
30204	Plaster furnaces	6	1			3	1	2	

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 1	PUBLIC POWER, COGENERATION AND DISTRICT HEATING								
10100	Public power and cogeneration plants								
10101	Combustion plants > = 300 mw	49.1	18.5	0.2	0.1	0.9	24.3	4.5	
10102	Combustion plants > = 50 and < 300 mw	1.4	0.9				1.2	0.3	
10103	Combustion plants < 50 mw	0.4	0.2				0.4	0.1	
10104	Gas turbines		0.2				0.2		
10105	Stationary engines	0.1	0.2						
10200	District heating plants								
10201	Combustion plants > = 300 mw	0.5	0.3				0.4	0.1	
10202	Combustion plants > = 50 mw and < 300 mw	1.2	0.4				0.6	0.2	
10203	Combustion plants < 50 mw	1.0	0.4			0.1	0.8	0.1	
10204	Gas turbines								
10205	Stationary engines								
GROUP 2	COMMERCIAL, INSTITUTIONAL & RESIDENTIAL COMBUSTION								
	(now further subdivided)								
20001	Combustion plants > = 50 mw	0.6	0.2	0.1			0.4	0.1	
20002	Combustion plants < 50 mw	10.2	4.0	4.4	1.3	14.0	17.6	2.3	
20003	Gas turbines								
20004	Stationary engines	0.1							
GROUP 3	INDUSTRIAL COMBUSTION								
30100	Ind. Combust. In boilers, gas turbines & station. Engines	0.1	0.1				0.2	0.1	
30101	Plants > = 300 mw	6.4	2.4			0.3	3.8	0.6	
30102	Plants > = 50 mw and < 300 mw	4.4	1.5			0.8	3.8	0.3	
30103	Plants < 50 mw	8.3	3.2	0.1	0.1	0.9	7.5	1.0	
30104	Gas turbines		0.2				0.3		
30105	Stationary engines	0.1	0.2				0.1		
30200	Process furnaces without contact								
30201	Refinery processes furnaces (now 10306)	1.4	0.5	0.2		0.1	1.0	0.2	
30202	Coke oven furnaces (now 10406)	0.5	0.3			0.2	1.0		
30203	Blast furnaces cowpers	0.1	0.2			1.6	1.3	0.1	
30204	Plaster furnaces							0.1	

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
30300	Industrial combustion - processes with contact								
30301	Sinter plant	356	177	19	30	3383	20		
30302	Reheating furnaces steel and iron	76	50	4	2	124	30	1	
30303	Gray iron foundries	13	7	8	1	987	7		
30304	Primary lead production	47	3			2	1		
30305	Primary zink production	24				2			
30306	Primary copper production	33	1			118	1		
30307	Secondary lead production	10							
30308	Secondary zink production					1			
30309	Secondary copper production	3		1		1			
30310	Secondary aluminium production	1	1	3					
30311	Cement	211	413	5	5	110	100	5	
30312	Lime	28	28	1	1	219	15		
30313	Asphalt concrete plants	14	2	1		2	3		
30314	Flat glass	28	59	1		2	6		
30315	Container glass	40	44	1		1	5		
30316	Glass wool	1	2						
30317	Other glass	7	26			1	1		
30318	Mineral wool	8	1			3	1		
30319	Bricks and tiles	81	49	5	3	225	27	1	
30320	Fine ceramics materials	52	14			182	13	1	
30321	Paper mill industry (drying proces.)	18	8	5		17	3	1	
30322	Alumina production	12	2						
GROUP 4	INDUSTRIAL PROCESSES								
40100	Production processes - petroleum industries (introduction)			1		6			
40101	Petroleum products processing	130	26	150	9	10	10	1	
40102	Fluid catalytic cracking - co boiler	115	23	4		28	4		
40103	Sulphur recovery plants	89		1		2			
40104	Storage &handl. Of products in refinery			93				1	
40200	Production proc. - iron & steel industries & collieries	7	4	2		211			
40201	Coke oven	30	9	38	30	333	4		5
40202	Blast furnace charging	8	1	3	16	475	5		
40203	Pig iron tapping	5	2		2	1			
40204	Solid smokeless fuel			1	1				
40205	Open hearth furnace steel plant	9	10	1	1	3			
40206	Basic oxygen furnace	48	7	1		1019	1		
40207	Electric furnace steel plant	2	13	4		435			
40208	Rolling mills	3	3	8		2	1		

% of total emissions

Snap Code	Description	So2	NO _x as NO ₂	Nmvoc	Ch4	Co	Co2	N2O	Nh3
30300	Industrial combustion - processes with contact								
30301	Sinter plant	1.3	1.0	0.1	0.1	4.9	0.4		
30302	Reheating furnaces steel and iron	0.3	0.3			0.2	0.6	0.1	
30303	Gray iron foundries					1.4	0.1		
30304	Primary lead production	0.2							
30305	Primary zink production	0.1							
30306	Primary copper production	0.1				0.2			
30307	Secondary lead production								
30308	Secondary zink production								
30309	Secondary copper production								
30310	Secondary aluminium production								
30311	Cement	0.8	2.3			0.2	2.1	0.3	
30312	Lime	0.1	0.2			0.3	0.3		
30313	Asphalt concrete plants	0.1					0.1		
30314	Flat glass	0.1	0.3				0.1		
30315	Container glass	0.1	0.2				0.1		
30316	Glass wool								
30317	Other glass		0.1						
30318	Mineral wool								
30319	Bricks and tiles	0.3	0.3			0.3	0.6	0.1	
30320	Fine ceramics materials	0.2	0.1			0.3	0.3	0.1	
30321	Paper mill industry (drying proces.)	0.1					0.1	0.1	
30322	Alumina production								
GROUP 4	INDUSTRIAL PROCESSES								
40100	Production processes - petrolium industries (introduction)								
40101	Petrolium products processing	0.5	0.1	0.7			0.2	0.1	
40102	Fluid catalytic cracking - co boiler	0.4	0.1				0.1		
40103	Sulphur recovery plants	0.3							
40104	Storage &handl. Of products in refinery			0.4				0.1	
40200	Production proc. - iron & steel industries & collieries					0.3			
40201	Coke oven	0.1	0.1	0.2	0.1	0.5	0.1		0.1
40202	Blast furnace charging					0.7	0.1		
40203	Pig iron tapping								
40204	Solid smokeless fuel								
40205	Open hearth furnace steel plant		0.1						
40206	Basic oxygen furnace	0.2				1.5			
40207	Electric furnace steel plant		0.1			0.6			
40208	Rolling mills								

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
40300	Production proc. - non ferrous metal industry	2				10			1
40301	Aluminium production (electrolysis)	34	4	1		276	5		
40302	Ferro alloys	22	6	2	1	246	4		
40303	Silicium production					1			
40304						26			
40400	Production proc. - inorganic chemical industry	9	3			7		1	5
40401	Sulfuric acid	201	7	1		13	1		
40402	Nitric acid		111	17		3		101	7
40403	Ammonia	1	28	19	1	7	16	18	30
40404	Ammonium sulphate	3	1	1		1			8
40405	Ammonium nitrate		5						13
40406	Ammonium phosphate								3
40407	Npk fertilisers	26	48	38					65
40408	Urea					1			29
40409	Carbon black	13			6	4			
40410	Titanium dioxide	11		41					
40411	Graphite	1							
40412	Calcium carbide production	1					2		
40500	Production proc. - organic chemical industry			14		5			
40501	Ethylene	1	6	60	4	8	6	2	
40502	Propylene			41					
40503	1,2 dichloroethane (except 040505)			8					
40504	Vinylchloride (except 040505)			10		1			
40505	1,2 dichloroeth. + vinylchl.(balanced proc)			5					
40506	Polyethylene low density			34					
40507	Polyethelene high density			20					
40508	Polyvinylchloride			12					
40509	Polypropylene			25					
40510	Styrene			1					
40511	Polystyrene			4					
40512	Styrene butadiene			36					
40513	Styrene-butadiene latex			2					
40514	Styrene-butadiene rubber (sbr)			5					
40515	Acrylonit. Butadiene styrene (abs) resins			7					
40516	Ethylene oxyde			5					
40517	Formaldehyde			11		6			
40518	Ethylbenzene			2					
40519	Phtalic anhydride	1		18		21			
40520	Acrylonitrile			3					
40521	Adipic acid		1					233	
40522	Storage & handling of chemical products			78					

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
40300	Production proc. - non ferrous metal industry								
40301	Aluminium production (electrolysis)	0.1				0.4	0.1		
40302	Ferro alloys	0.1				0.4	0.1		
40303	Silicium production								
40304									
40400	Production proc. - inorganic chemical industry							0.1	0.1
40401	Sulfuric acid	0.7							
40402	Nitric acid		0.6	0.1				5.4	0.1
40403	Ammonia		0.2	0.1			0.3	1.0	0.5
40404	Ammonium sulphate								0.1
40405	Ammonium nitrate								0.2
40406	Ammonium phosphate								0.1
40407	Npk fertilisers	0.1	0.3	0.2					1.1
40408	Urea								0.5
40409	Carbon black								
40410	Titanium dioxide			0.2					
40411	Graphite								
40412	Calcium carbide production								
40500	Production proc. - organic chemical industry			0.1					
40501	Ethylene			0.3			0.1	0.1	
40502	Propylene			0.2					
40503	1,2 dichloroethane (except 040505)								
40504	Vinylchloride (except 040505)								
40505	1,2 dichloroeth. + vinylchl.(balanced proc)								
40506	Polyethylene low density			0.2					
40507	Polyethelene high density			0.1					
40508	Polyvinylchloride			0.1					
40509	Polypropylene			0.1					
40510	Styrene								
40511	Polystyrene								
40512	Styrene butadiene			0.2					
40513	Styrene-butadiene latex								
40514	Styrene-butadiene rubber (sbr)								
40515	Acrylonit. Butadiene styrene (abs) resins								
40516	Ethylene oxyde								
40517	Formaldehyde			0.1					
40518	Ethylbenzene								
40519	Phtalic anhydride			0.1					
40520	Acrylonitrile								
40521	Adipic acid							12.4	
40522	Storage & handling of chemical products			0.4					

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
40600	Production proc. - wood,paper pulp,food,drink & other ind.	2	2	4		1			
40601	Chipboard	5	7	27	2	6	1		
40602	Paper pulp (kraft process)	27	11	32		5			
40603	Paper pulp (acid sulfite process)	52	2	17					
40604	Paper pulp (neutral sulphite semi-chimi.)	14							
40605	Bread			157			2		
40606	Wine			10			18		
40607	Beer			55					
40608	Spirits			56					
40609	Bark gasifierb								
40610	Asphalt roofing materials	1		11		5			
40611	Road paving with asphalt			23					
40612	Cement	31	34			5	82		
40613	Glass	18	13				4		
40614	Lime	3	1	1		4	11		
40700	Production proc. - cooling plants								4
GROUP 5	EXTRACTION & DISTRIBUTION OF FOSSIL FUELS								
50100	Extraction and 1st treatment of solid fuels			3					
50101	Open cast mining		1		2396				
50102	Underground mining				4546				
50103	Storage				563	33			
50200	Extraction, 1st treatment and loading of liquid fuels				30				
50201	Land-based			2	3				
50202	Off-shore		51	346	100	1	6		
50300	Extract., 1st treatment and loading of gaseous fuels			12	10				
50301	Desulfura.	44	1						
50302	Other land-based	1	13	119	28	1	18		
50303	Off-shore		4	5	33	1	1		
50400	Liquid fuel distribution (except gasoline)			2					
50401	Marine terminals (tankers, handl., Stor.)			137	1				
50402	Other handling and storage			32					
50500	Gasoline distribution			6					
50501	Refinery despatch station			41					
50502	Transp. And depots (exc. Serv. Station)			154					
50503	Service stations			396					

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
40600	Production proc. - wood,paper pulp,food,drink & other ind.								
40601	Chipboard			0.1					
40602	Paper pulp (kraft process)	0.1	0.1	0.1					
40603	Paper pulp (acid sulfite process)	0.2		0.1					
40604	Paper pulp (neutral sulphite semi-chimi.)	0.1							
40605	Bread			0.7					
40606	Wine						0.4		
40607	Beer			0.3					
40608	Spirits			0.3					
40609	Bark gasifierb								
40610	Asphalt roofing materials			0.1					
40611	Road paving with asphalt			0.1					
40612	Cement	0.1	0.2				1.7		
40613	Glass	0.1	0.1				0.1		
40614	Lime						0.2		
40700	Production proc. - cooling plants								0.1
GROUP 5	EXTRACTION & DISTRIBUTION OF FOSSIL FUELS								
50100	Extraction and 1st treatment of solid fuels								
50101	Open cast mining				5.3				
50102	Underground mining				10.0				
50103	Storage				1.2				
50200	Extraction, 1st treatment and oading of liquid fuels				0.1				
50201	Land-based								
50202	Off-shore		0.3	1.6	0.2		0.1		
50300	Extract., 1st treatment and loading of gaseous fuels			0.1					
50301	Desulfura.	0.2							
50302	Other land-based		0.1	0.5	0.1		0.4		
50303	Off-shore				0.1				
50400	Liquid fuel distribution (except gasoline)								
50401	Marine terminals (tankers, handl., Stor.)			0.6					
50402	Other handling and storage			0.1					
50500	Gasoline distribution								
50501	Refinery despatch station			0.2					
50502	Transp. And depots (exc. Serv. Station)			0.7					
50503	Service stations			1.8					

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
50600	Gas distribution networks			29	361				
50601	Pipelines			2	128				
50602	Pipeline compressor stations (now 81000)		12	7	125	3	2		
50603	Distribution networks			83	2084	23			
GROUP 6	SOLVENT USE								
60000	Solvent use (introduction)								
60100	Solvent use - paint application			510					
60101	Manufacture of automobiles			131		1			
60102	Other indus. Application			719					
60103	Construction and buildings			365					
60104	Domestic use			199					
60200	Solvent use - degreasing and dry cleaning								
60201	Metal degreasing			400					
60202	Dry cleaning			125					
60300	Solvent use - chemicals products manufacturing/proc.			138					
60301	Polyester processing			10					
60302	Polyvinylchloride processing			76					
60303	Polyurethane processing			18					
60304	Polystyrene foam process.			24					
60305	Rubber processing			79					
60306	Pharmaceutical prod. Manu.			116					
60307	Paints manufacturing			75					
60308	Inks manufacturing			4					
60309	Glues manufacturing			80					
60310	Asphalt blowing			29					
60311	Adhesive tapes manufact.			24					
60400	Solvent use - other use of solvents and related activities			457					
60401	Glass wool enduction			86					
60402	Mineral wool enduction			1					
60403	Printing industry			278					
60404	Fat edible and not edible oil extraction			88					
60405	Application of glues and adhesives			186					
60406	Preservation of wood			136					
60407	Underseal treatment of vehicles			31					
60408	Domestic solvent use (other than paint appl.)			492					
60409	Vehicles dewaxing			43					

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
50600	Gas distribution networks			0.1	0.8				
50601	Pipelines				0.3				
50602	Pipeline compressor stations (now 81000)		0.1		0.3				
50603	Distribution networks			0.4	4.6				
GROUP 6	SOLVENT USE								
60000	Solvent use (introduction)								
60100	Solvent use - paint application			2.3					
60101	Manufacture of automobiles			0.6					
60102	Other indus. Application			3.3					
60103	Construction and buildings			1.7					
60104	Domestic use			0.9					
60200	Solvent use - degreasing and dry cleaning								
60201	Metal degreasing			1.8					
60202	Dry cleaning			0.6					
60300	Solvent use - chemicals products manufacturing/proc.			0.6					
60301	Polyester processing								
60302	Polyvinylchloride processing			0.3					
60303	Polyurethane processing			0.1					
60304	Polystyrene foam process.			0.1					
60305	Rubber processing			0.4					
60306	Pharmaceutical prod. Manu.			0.5					
60307	Paints manufacturing			0.3					
60308	Inks manufacturing								
60309	Glues manufacturing			0.4					
60310	Asphalt blowing			0.1					
60311	Adhesive tapes manufact.			0.1					
60400	Solvent use - other use of solvents and related activities			2.1					
60401	Glass wool enduction			0.4					
60402	Miniral wool enduction								
60403	Printing industry			1.3					
60404	Fat edible and not edible oil extraction			0.4					
60405	Application of glues and adhesives			0.9					
60406	Preservation of wood			0.6					
60407	Underseal treatment of vehicles			0.1					
60408	Domestic solvent use (other than paint appl.)			2.3					
60409	Vehicles dewaxing			0.2					

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 7	ROAD TRANSPORT								
70100	Road transport - passenger cars	2	161	138	12	1182	17		
70101	Highway driving	36	1007	340	22	3536	71	4	3
70102	Rural driving	93	1704	1014	38	8187	135	7	5
70103	Urban driving	115	1198	1965	78	18521	180	6	4
70200	Road transport - light duty vehicles < 3.5 t		14	12	1	71	1		
70201	Highway driving	11	93	35	1	231	9	1	
70202	Rural driving	31	204	108	3	914	22	1	
70203	Urban driving	57	240	228	7	2111	42	1	
70300	Road transport - heavy duty vehicles > 3.5 t	7	166	22	2	53	9	1	
70301	Highway driving	91	1006	169	6	480	62	3	
70302	Rural driving	174	1360	229	7	1085	86	3	
70303	Urban driving	96	678	245	6	1028	49	2	
70400	Road transport - mopeds and motorcycles < 50 cm ³	2	3	318	6	492	3		
70500	Road transport - motorcycles > 50 cm ³			7		19			
70501	Highway driving		2	55	2	138	1		
70502	Rural driving	2	6	158	6	377	3		
70503	Urban driving	2	6	163	5	494	3		
70600	Road transport - gasoline evaporation from vehicles			1550					
GROUP 8	OTHER MOBILE SOURCES AND MACHINERY								
80100	Other mob. Sources - off road vehicles and machines	7	100	23	2	72	6		
80101	Agriculture (now 80600)	115	733	210	7	1000	46	1	
80102	Forestry (now 80700)	1	13	13	1	33	1		
80103	Industry (now 80800)	27	258	73	2	131	16	2	
80104	Military (now 80100)	3	41	19	1	101	3		
80105	Households / gardening (now 80900)		3	79	1	351	1		
80200	Other mob. Sources -railways	40	199	33	1	83	14		
80300	Other mob. Sources - inland waterways	12	71	29		33	5		

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 7	ROAD TRANSPORT								
70100	Road transport - passenger cars		0.9	0.6		1.7	0.4		
70101	Highway driving	0.1	5.6	1.6		5.1	1.5	0.2	0.1
70102	Rural driving	0.3	9.5	4.7	0.1	11.7	2.8	0.4	0.1
70103	Urban driving	0.4	6.7	9.0	0.2	26.6	3.8	0.3	0.1
70200	Road transport - light duty vehicles < 3.5 t		0.1	0.1		0.1			
70201	Highway driving		0.5	0.2		0.3	0.2	0.1	
70202	Rural driving	0.1	1.1	0.5		1.3	0.5	0.1	
70203	Urban driving	0.2	1.3	1.0		3.0	0.9	0.1	
70300	Road transport - heavy duty vehicles > 3.5 t		0.9	0.1		0.1	0.2	0.1	
70301	Highway driving	0.3	5.6	0.8		0.7	1.3	0.2	
70302	Rural driving	0.6	7.6	1.1		1.6	1.8	0.2	
70303	Urban driving	0.3	3.8	1.1		1.5	1.0	0.1	
70400	Road transport - mopeds and motorcycles < 50 cm ³			1.5		0.7	0.1		
70500	Road transport - motorcycles > 50 cm ³								
70501	Highway driving			0.3		0.2			
70502	Rural driving			0.7		0.5	0.1		
70503	Urban driving			0.7		0.7	0.1		
70600	Road transport - gasoline evaporation from vehicles			7.1					
GROUP 8	OTHER MOBILE SOURCES AND MACHINERY								
80100	Other mob. Sources - off road vehicles and machines		0.6	0.1		0.1	0.1		
80101	Agriculture (now 80600)	0.4	4.1	1.0		1.4	1.0	0.1	
80102	Forestry (now 80700)		0.1	0.1					
80103	Industry (now 80800)	0.1	1.4	0.3		0.2	0.3	0.1	
80104	Military (now 80100)		0.2	0.1		0.1	0.1		
80105	Households / gardening (now 80900)			0.4		0.5			
80200	Other mob. Sources -railways	0.1	1.1	0.2		0.1	0.3		
80300	Other mob. Sources - inland waterways		0.4	0.1			0.1		

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
80400	Other mob. Sources - marine activities	5	21	14	2	40	1		
80401	Harbours (now deleted)	59	82	10	1	19	5		
80402	National sea traffic	249	468	94	3	166	15	1	
80403	National fishing	25	143	7	1	17	8		
80500	Other mob. Sources - airports (lto cycles and ground act.)	20	179	71	4	174	18	1	
GROUP 9	WASTE TREATMENT AND DISPOSAL ACTIVITIES								
90100	Waste water treatment (now 91001/2)	2	1	32	211			8	10
90200	Waste incineration		1						
90201	Incineration of dom/municipal wastes	29	43	4	9	114	17		
90202	Incineration of industrial wastes	14	4	5	1	14	2		
90203	Flaring in oil industry	35	10	1		3	2		
90204	Flaring in chemical industries	1				14	1		
90205	Incineration of sludges from water treatment	1	1			1			
90206	Flaring in oil and gas production (new)								
90300	Sludge spreading (now 91003)			16	155				7
90400	Landfills (now 91004)	5	29	45	7932	267	19		74
90500	Compost prodn from waste (now 91005)				27		27		
90600	Biogas production (now 91006)				40				
90700	Open burning of agricl wastes (except 100300)		153	401	358	4014	15	5	
90800	Latrines (now 91007)				18				37

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NMVOG	CH ₄	CO	CO ₂	N ₂ O	NH ₃
80400	Other mob. Sources - marine activities		0.1	0.1		0.1			
80401	Harbours (now deleted)	0.2	0.5				0.1		
80402	National sea traffic	0.9	2.6	0.4		0.2	0.3	0.1	
80403	National fishing	0.1	0.8				0.2		
80500	Other mob. Sources - airports (lto cycles and ground act.)	0.1	1.0	0.3		0.2	0.4	0.1	
GROUP 9	WASTE TREATMENT AND DISPOSAL ACTIVITIES								
90100	Waste water treatment (now 91001/2)			0.1	0.5			0.4	0.2
90200	Waste incineration								
90201	Incineration of dom/municipal wastes	0.1	0.2			0.2	0.4		
90202	Incineration of industrial wastes	0.1							
90203	Flaring in oil industry	0.1	0.1						
90204	Flaring in chemical industries								
90205	Incineration of sludges from water treatment								
90206	Flaring in oil and gas production (new)								
90300	Sludge spreading (now 91003)			0.1	0.3				0.1
90400	Landfills (now 91004)		0.2	0.2	17.5	0.4	0.4		1.3
90500	Compost prodn from waste (now 91005)				0.1		0.6		
90600	Biogas production (now 91006)				0.1				
90700	Open burning of agricl wastes (except 100300)		0.9	1.8	0.8	5.8	0.3	0.3	
90800	Latrines (now 91007)								0.6

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 10	AGRICULTURE ACTIVITIES								
100100	Cultures with fertilizers (except animal manure)			46	468			179	226
100101	Permanent crops	1	16	50	38	7	1	42	59
100102	Arable land crops			61	244			322	693
100103	Rice field			3	47			1	7
100104	Market gardening		7	6	24	1	6	8	54
100105	Grassland		4	101	195			84	56
100106	Fallows				1			1	
100200	Cultures without fertilizers								
100201	Permanent crops			24	15			9	
100202	Arable land crops			10	10			17	
100203	Rice field				84			1	
100204	Market gardening			1	1			1	
100205	Grassland			42	16			33	3
100206	Fallows				8			13	
100300	Stubble burning		21	34	35	571	4		
100400	Animal breeding (enteric fermentation)								
100401	Dairy cows				3895				12
100402	Other cattle				4149				11
100403	Ovines				975				6
100404	Pigs				215				
100405	Horses				80				
100406	Asses				5				
100407	Goats				66				1
100500	Animal breeding (excretions)				150				21
100501	Dairy cows			31	850		2	4	1430
100502	Other cattle			12	1092		2	7	1225
100503	Fattening pigs			289	1353		1	3	607
100504	Sows			26	259		4		195
100505	Sheep			3	216		2	1	316
100506	Horses			2	80				56
100507	Laying hens			5	115				140
100508	Boilers			9	70				101
100509	Other poultry			3	33				36
100510	Fur animals				2				10

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 10	AGRICULTURE ACTIVITIES								
100100	Cultures with fertilizers (except animal manure)			0.2	1.0			9.5	4.0
100101	Permanent crops		0.1	0.2	0.1			2.2	1.0
100102	Arable land crops			0.3	0.5			17.1	12.2
100103	Rice field				0.1			0.1	0.1
100104	Market gardening				0.1		0.1	0.4	0.9
100105	Grassland			0.5	0.4			4.5	1.0
100106	Fallows							0.1	
100200	Cultures without fertilizers								
100201	Permanent crops			0.1				0.5	
100202	Arable land crops							0.9	
100203	Rice field				0.2			0.1	
100204	Market gardening							0.1	
100205	Grassland			0.2				1.8	0.1
100206	Fallows							0.7	
100300	Stubble burning		0.1	0.2	0.1	0.8	0.1		
100400	Animal breeding (enteric fermentation)								
100401	Dairy cows				8.6				0.2
100402	Other cattle				9.1				0.2
100403	Ovines				2.1				0.1
100404	Pigs				0.5				
100405	Horses				0.2				
100406	Asses								
100407	Goats				0.1				
100500	Animal breeding (excretions)				0.3				0.4
100501	Dairy cows			0.1	1.9			0.2	25.1
100502	Other cattle			0.1	2.4			0.4	21.5
100503	Fattening pigs			1.3	3.0			0.2	10.6
100504	Sows			0.1	0.6		0.1		3.4
100505	Sheep				0.5			0.1	5.5
100506	Horses				0.2				1.0
100507	Laying hens				0.3				2.5
100508	Boilers				0.2				1.8
100509	Other poultry				0.1				0.6
100510	Fur animals								0.2

**Emissions in kilotonnes, except CO₂ in
megatonnes**

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
GROUP 11	NATURE								
110100	Nature - deciduous forests		15	188	83	23		19	19
110101	High isoprene emitters			910	354			39	
110102	Low isoprene emitters			91	10	1		1	
110103	Non isoprene emitters			578	257			24	
110200	Nature - coniferous forests			2342	1259	2		184	27
110300	Nature - forest fires	3	35	105	83	1332	56	1	
110400	Nature - natural grassland			135	192			54	19
110500	Nature - humid zones				68			1	
110501	Undrained and brackish marshes				2444			16	
110502	Drained marshes				25			3	
110503	Raised bogs				238			1	
110600	Nature - waters				10			7	
110601	Lakes				4716			15	
110602	Shallow saltwaters				363			13	
110603	Ground waters				6				
110604	Drainage waters				1			3	
110605	Rivers				32			1	
110606	Ditches and canals				33			2	
110607	Open sea (> 6m)				3			167	
110700	Nature - animals								
110701	Termites								
110702	Mammals				99		171		19
110800	Nature - volcanos	570							
110900	Nature - near surface deposits				120				
111000	Nature - humans (now deleted)				8		68		30
	Total	27873	17923	21770	45415	69712	4764	1880	5701

% of total emissions

Snap Code	Description	SO ₂	NO _x as NO ₂	NM VOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
Group 11	Nature								
110100	Nature - deciduous forests		0.1	0.9	0.2			1.0	0.3
110101	High isoprene emitters			4.2	0.8			2.1	
110102	Low isoprene emitters			0.4				0.1	
110103	Non isoprene emitters			2.7	0.6			1.3	
110200	Nature - coniferous forests			10.8	2.8			9.8	0.5
110300	Nature - forest fires		0.2	0.5	0.2	1.9	1.2	0.1	
110400	Nature - natural grassland			0.6	0.4			2.9	0.3
110500	Nature - humid zones				0.1			0.1	
110501	Undrained and brackish marshes				5.4			0.9	
110502	Drained marshes				0.1			0.2	
110503	Raised bogs				0.5			0.1	
110600	Nature - waters							0.4	
110601	Lakes				10.4			0.8	
110602	Shallow saltwaters				0.8			0.7	
110603	Ground waters								
110604	Drainage waters							0.2	
110605	Rivers				0.1			0.1	
110606	Ditches and canals				0.1			0.1	
110607	Open sea (> 6m)							8.9	
110700	Nature - animals								
110701	Termites								
110702	Mammals				0.2		3.6		0.3
110800	Nature - volcanos	2.0							
110900	Nature - near surface deposits				0.3				
111000	Nature - humans (now deleted)						1.4		0.5