HAZARDOUS WASTE IDENTIFICATION GUIDE

ANNEX 7-3

INFORMATION ABOUT THE HAZARD STATEMENTS, HAZARDOUS PROPERTIES, AND WORST CASE COMPOUNDS OF THE HAZARDOUS SUBSTANCES MOST FREQUENTLY OCCURRING IN WASTE[1]

[1] The Annex is based on the *Europese afvalstoffenlijst EURAL. Handleiding* (Belgium).

Abbreviations:

VI – Annex VI to the CLP Regulation

C&L – CLP Inventory

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
VI	As	1327-53-3	As_2O_3	74.920	197.84					H300(2)	H350	H314				H400, H410
VI	Cd	10108-64-2	$CdCl_2$	112.410	183.310				H372	H301, H330(2)	H350		H360	H340		H400, H410
VI	Cr	1333-82-0	CrO_3	51.990	99.990	H271			H372	H301, H311, H330(2)	H350	H314	H361	H340	H317, H334	H400, H410
C&L	Cr	10049-05-5	$CrCl_2$	51.990	18.540			H315, H319		H302						
C&L	Cu	7447-39-4	$CuCl_2$	63.550	134.450			H315, H319		H301						H411
VI	Hg	7487-94-7	$HgCl_2$	200.59	271.490				H372	H300(2)		H314	H361	H341		H400, H410
C&L	Pb	7758-95-4	$PbCl_2$	207.2	278.100				H373	H302, H332			H360			H400, H410
VI	Ni	7718-54-9	$NiCl_2$	58.69	129.590			H315	H372	H301, H331	H350		H360		H317, H334	H400, H410
C&L	Ag	7783-90-6	$AgCl_2$	107.87	178.77											H400, H410
VI	Zn	7646-85-7	$ZnCl_2$	65.38	136.280					H302		H314				H400, H410
VI	Al	7446-70-0	$AlCl_2$	26.98	97.88							H314				
C&L	K	7447-40-7	KCl	39.1	74.55											
C&L	Na	7647-14-5	NaCl	22.99	58.44											
C&L	Mg	7786-30-3	$MgCl_2$	24.3	95.2											
C&L	Mn	7773-01-5	$MnCl_2$	54.94	125.84					H302						
VI	B	1303-86-2	$B2O_3$	10.81	69.62								H360			
C&L	Fe	7758-94-3	$FeCl_2$	55.85	126.75			H318		H302						
VI	Ba	10361-37-2	$BaCl_2$	137.33	208.23					H301, H332						H411
VI	Co	7646-79-9	$CoCl_2$	58.930	129.830					H302	H350		H360		H317, H334	H400, H410
C&L	Mo	1317-33-5	MoS	95.940	128.000											
C&L	Se	7446-08-4	SeO_2	78.96	110.960				H373	H301, H331						H400, H410

[2] According to Regulation (EU) No 1357/2014; where the table does not include a cut-off value, cut-off values are not used for the assessment of the relevant hazardous property.

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
VI	Sb	1309-64-4	Sb_2O_3	121.75	291.5						H351					
C&L	Ti	13463-67-7	TiO_2	47.88	79.88											
VI	Tl	7446-18-6	Tl_2SO_4	204.38	504.820			H315	H372	H300(2)						H411
C&L	Sn	7772-99-8	$SnCl_2$	118.69	189.59			H318		H302, H312		H314				H400
VI	V	1314-62-1	V_2O_5	50.940	181.880				H372, H335	H302, H332			H361	H341		H411
C&L	Cl-	7647-14-5	NaCl	22.99	58.44											
C&L	Br-	7647-15-6	KBr	79.90	119								H360			
C&L	S	7757-82-6	$NaSO_4$	32.06	119.05											
VI	P	13598-36-2	H_3PO_3	30.97	80					H302		H314				
C&L	Si	14808-60-7	SiO_2	28.08	60.08				H373							
VI	As compounds	1303-28-2	As_2O_5							H301, H331	H350					H400, H410
VI	Cu compounds	1317-39-1	Cu_2O							H302						H400, H410
VI	Hg compounds (inorganic)	593-74-8	$HgCl_2$						H372	H300(2)		H314	H361	H341		H400, H410
VI	Hg compounds (organic)	593-74-8	$(CH_3)_2Hg$						H373	H300(2), H310(1), H330(2)						H400, H410
VI	Cr compounds	1333-82-0	$Cr0_3$			H271			H372	H301, H311, H330(2)	H350	H314	H361	H340	H317, H334	H400, H410
C&L	cyanide salts	151-50-8	KCN							H300(2), H310(1), H330(2)						H410
VI	ammonium salts	7664-41-7	NH_3				H221			H331		H314				H400
C&L	tributyltin compounds	1461-22-9	$C_{12}H_{17}SnCl$					H315, H319	H372	H301, H312						H410
VI	Br compounds	10035-10-6	HBr						H335			H314				
C&L	Br compounds	558-13-4	CBr_4					H315, H318	H335	H302						
C&L	F compounds	811-97-2	$C_2H_2F_2$													
VI	benzene	71-43-2					H225	H315, H319	H304, H372		H350			H340		
VI	toluene	108-88-3					H225	H315	H304, H373				H361			
VI	ethylbenzene	100-41-4					H225			H332						
VI	xylenes	1330-20-7 (mixture)					H226	H315		H312, H332						
VI	styrene	100-42-5					H226	H315, H319		H332						

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
VI	hexane	110-54-3					H225	H315	H304, H373				H361			H411
VI	heptane	142-82-5					H225	H315	H304							H410
VI	octane	111-65-9					H225	H315	H304							H410
	C10-C12						H224	H315	H304		H350		H361	H340		H411
	C12-C20						H226	H315	H373, H304	H332	H350					H411
	C20-C30						H226	H315	H373, H304	H332	H350					H400, H410
	C30-C40								H372, H304		H350		H361			H400, H410
C&L	acenaphthene	83-32-9						H319								H410
C&L	acenaphthylene	208-96-8						H315, H319	H335	H302						
C&L	anthracene	120-12-7						H319								
VI	benzo[a]pyrene	50-32-8									H350		H360	H340	H317	H410
VI	benzo[b]fluoranthene	205-99-2									H350					H410
C&L	benzo[g,h,i]-perylene	191-24-2														H410
VI	benzo[k]fluor-anthene	207-08-9									H350					H410
VI	chrysene	218-01-9									H350			H341		H410
VI	dibenz[a,h]anthracene	53-70-3									H350					H410
VI	benz[a]anthracene	56-55-3									H350					H410
C&L	phenanthrene	85-01-8								H302						
C&L	phenanthrene	206-44-0								H302						
C&L	fluorene	86-73-7														H410
C&L	Indeno[1,2,3-cd]-pyrene	193-39-5									H351					
VI	naphthalene	91-20-3								H302	H351					H410
C&L	pyrene	129-00-0						H315, H319	H335							H410
	SOM 16 PAK - EPA*							H315, H319	H335	H302	H350		H360	H340	H317	H410
	SOM 10 PAK- OVAM*									H302	H350		H360	H340	H317	H410
VI	chloroethene (vinyl chloride)	75-01-4					H220				H350					
VI	dichloromethane	75-09-2									H351					
VI	trans-1,2_dichloroethene	156-60-5					H225			H332						H412
VI	cis-1,2-dichloroethene	156-59-2					H225			H332						H412

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
VI	cis+trans-1,2-dichloroethene	540-59-0					H225			H332						H412
VI	1,1-dichloroethane	75-34-3					H225	H319	H335	H302						H412
VI	trichloromethane (chloroform)	67-66-3						H315, H319	H372	H302, H331	H351		H361			
VI	1,1,1-trichloroethane	71-55-6								H332						H420
VI	tetrachloromethane	56-23-5							H372	H301, H311, H331	H351					H412, H420
VI	1,2-dichloroethane	107-06-2					H225	H315, H319	H335	H302	H350					
VI	chlorbenzene	108-90-7					H226			H332						H411
VI	trichloroethylene (tri)	79-01-6						H315, H319			H350			H341		H412
VI	1,1,2-trichloroethane									H302, H312, H332	H351					
VI	trichloroethylene (per)										H351					H411
VI	1,3-dichlorobenzene	541-73-1								H302						H411
VI	1,4-dichlorobenzene	106-46-7						H319			H351					H400, H410
VI	1,2-dichlorobenzene	95-50-1						H315, H319	H335	H302						H400, H410
C&L	1,3,5-trichlorobenzene	108-70-3						H315, H319	H335	H302, H312, H332						H412
VI	1,2,4-trichlorobenzene	120-82-1						H315		H302						H400, H410
VI	1,2,3-trichlorobenzene	87-61-6						H315, H319	H335	H302						H411
C&L	1,2,3,5-tetrachlorobenzene	634-90-2								H302						H400, H410
C&L	1,2,4,5-tetrachlorobenzene	95-94-3								H302						H400, H410
C&L	1,2,3,4-tetrachlorobenzene	634-66-2								H302						H400, H410
VI	pentachlorobenzene	608-93-5					H228			H302						H400, H410
VI	hexachlorobenzene	118-74-1							H372		H350					H400, H410
C&L	PCB 28	7012-3755							H373							H400, H410
C&L	PCB 52	35693-99-3							H373							H400, H410
C&L	PCB 101	37680-73-2							H373							H400, H410
C&L	PCB 118	31508-00-6							H373							H400, H410
C&L	PCB 153	35065-27-1							H373							H400,

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
																H410
C&L	PCB 138	35065-28-2							H373							H400, H410
C&L	PCB 180	35065-29-3							H373							H400, H410
	7 congeners*								H373							H400, H410
VI	2,3,4,6-tetrachlorophenol	58-90-2						H315, H319		H301						H400, H410
VI	2,4,5-trichlorophenol	95-95-4						H315, H319		H302						H400, H410
VI	2,4,6-trichlorophenol	88-06-2						H315, H319		H302	H351					H400, H410
VI	2,4-dichlorophenol	120-83-2						H314		H302, H311		H314				H411
VI	2-chlorophenol	95-57-8								H302, H312, H332						H411
VI	pentachlorophenol	87-86-5						H315, H319	H335	H301, H311, H330(2)	H351					H400, H410
VI	benzoyl benzoate	120-51-4								H302						H411
VI	benzidine	92-87-5								H302	H350					H400, H410
VI	acetaldehyde	75-07-0					H224	H319	H335		H351					
C&L	propane-2-bromo-2-methyl-	507-19-7					H225									
VI	butane, 2-methyl-	78-78-4					H224		H304							H411
VI	acetone	67-64-1					H225	H319								
C&L	3-Hexanol	623-37-0					H226									
VI	toluene	108-88-3					H225	H315	H304, H373				H361			
VI	Heptane, 3-methyl-	589-81-1					H225	H315	H304							H400, H410
C&L	2-Hexanol, 2,5-dimethyl-, (S)-	3730-60-7						H315, H318	H335	H302						
C&L	Octane, 2,3-dimethyl-	7146-60-3					H226									H413
C&L	Heptane, 2,2,4,6,6-pentamethyl-	13475-82-6						H319								H400, H410
not in C&L or VI	Octane, 4-ethyl-	15869-86-0														
C&L	2-Heptenal, (E)-	18829-55-5					H226			H302, H311					H317	
C&L	Heptane, 2,5-dimethyl-	2216-30-0						H315								H400, H410
not in C&L or VI	Tridecan, 3-methyl-	6418-41-3														

Data source	Substance/element	CAS No.	Additional data (for the worst case scenario calculations)			Hazardous properties/cut-off values[2]										
			Compound	Atomic mass of the element	Molar mass of the compound	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
						0	0	1	1	0.1	0.1	1	0.3	0.1	10	0
C&L	Heptanonitrile	629-08-3					H226	H315, H319	H335	H302, H312, H332						
C&L	undecane	1120-21-4							H304							
C&L	dodecane	112-40-3						H319								
C&L	tridecane	629-50-5							H304							
not in C&L or VI	2-Octene	111-67-1														
C&L	lenacil	2164-08-1														H400, H410
C&L	bromacil	314-40-9								H302						H400, H410
C&L	HCH alpha	319-84-6								H301, H312	H351					H400, H410
C&L	HCH beta	319-85-7								H301, H312	H351					H400, H410
VI	HCH gamma (lindane)	58-89-9							H373	H301, H312, H332						H400, H410
C&L	HCH delta	319-86-8								H301, H312	H351					H400, H410
VI	aldrin	309-00-2							H372	H301, H311	H351					H400, H410
VI	dieldrin	60-57-1							H372	H301, H310(1)	H351					H400, H410
VI	isodrin	465-73-6								H300(2), H310(1), H330(2)						H400, H410
C&L	p,p'-DDD	72-54-8								H301, H312	H351					H400, H410
C&L	p,p'-DDE	72-55-9								H302	H351					H400, H410
C&L	o,p'-DDT	789-02-6							H372	H301	H351					H400, H410
VI	p,p'-DDT	50-29-3							H372	H301	H351					H400, H410
VI	heptachlor	76-44-8							H373	H301, H311	H351					H400, H410
VI	heptachlor epoxide	1024-57-3							H373	H301	H351					H400, H410
C&L	cis-chlordane	5103-71-9						H315, H319	H335	H302, H311, H332						H400
C&L	trans-chlordane	5103-74-2								H302	H351					H400
VI	endosulfan-alpha/beta	115-29-7								H300(2), H312, H330(2)						H400, H410
C&L	endosulfanesulphate	1031-07-8								H300(2)						H400

Data source	**Substance/element**	**CAS No.**	**Additional data (for the worst case scenario calculations)**			**Hazardous properties/cut-off values[2]**										
			Compound	**Atomic mass of the element**	**Molar mass of the compound**	**HP2**	**HP3**	**HP4**	**HP5**	**HP6**	**HP7**	**HP8**	**HP10**	**HP11**	**HP13**	**HP14**
						0	**0**	**1**	**1**	**0.1**	**0.1**	**1**	**0.3**	**0.1**	**10**	**0**
VI	creosote	8001-58-9									H350					
VI	pentachlorophenol	87-86-5						H315, H319	H335	H301, H311, H330(2)	H351					H400, H410
VI	permethrin	52645-53-1								H302, H332					H317	H400, H410
VI	cuphluthrin	68359-37-5								H300(2), H330(2)						H400, H410
VI	deltamethrin	52918-63-5								H301, H331						H400, H410
VI	akaconazole	60207-31-0								H302						
VI	propiconazole	60207-90-1								H302					H317	H400, H410
VI	Cu naphthenate	1338-02-9					H226			H302						H400, H410
C&L	Zn naphthenate	12001-85-3					H226	H319								H411