8. MATERIALS

The raw materials, intermediates, products, laboratory chemicals and fuels to be used in the facility are listed in the tables in this section. In the case of process associated cleaning chemicals, water treatment chemicals, cooling water/boiler water additives and laboratory chemicals, details have been provided where annual usage exceeds 2.5kg or 2.5 litres. Where available, the Risk Phrases and Safety Phrases of each substance are provided.

Information on the wastes to be handled in the different elements of the facility is provided in the tables in section 3.3.3, 3.4.6 and 3.6.4.

8.1 Community Recycling Park

Aside from the recyclables deposited in the community recycling, it is not anticipated that any other materials will be generated or used in the community recycling park.

8.2 Waste Transfer Station

Information on the materials to be used or stored in the waste transfer station, apart from the waste materials, is provided in tables 8.1, 8.2 and 8.3.

8.3 Waste to Energy Plant

Information on the materials that will be used or stored in this element of the facility, such as demineralisation chemicals, flue gas cleaning materials etc., is provided in tables 8.4, 8.5 and 8.6.

8.4 Laboratory in the Waste to Energy Plant

Information on the materials that will be used in the laboratory chemicals is provided in tables 8.7, 8.8 and 8.9.

Table 8.1 Waste Transfer Station **(Part 1 of 3)** (sheet 1 of 1): **Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
A01	Bromatrol (with Bitrex™)	28772-56-7 57-55-6 3734-33-6	Dangerous for the environment (o)	0.1	0.1	Vermin control (rodenticide)	Organic	R53 R58	S3/9/14/49 S20 S24 S36/37 S56 S61 S62	No
A02	Diesel gas oil	68334-30-5	Flammable (e) Harmful (h) Carcinogenic (l)	To be decided in detailed design.	To be confirmed in detailed design.	Fuel for on-site vehicles, stationary pump motors emergency generator	Organic	R10 R40 R58 R65 R66	S16 S43 S45 S53 S61 S62	No
A03	Fire retardant foam (Viking Supreme3G-ARC™ or similar)	Mixture – no single CAS number applicable	Irritant	To be confirmed in the detailed design stage	To be confirmed in the detailed design stage	Emergency fire fighting	Mixture of organic and inorganic components	R36/37/38 R66	S20/21 S23 S24/25 S26 S28 S36/37/39 S56 S63	No
A04	Liquid Nitrogen	7727-37-9	Not applicable	(10 000 litres)	Will only be used in case of shutdown of N_2 generator	Inert material used for residual fill in bulking up and transfer operations	Inorganic	R34	S18 S24 S37 S39	No
A05	Nitrogen (gas)	7727-37-9	Not applicable	(1-2m³)	Will be assessed in detailed design	Inert gas used for residual fill in bulking up and transfer operations	Inorganic		S18	No
A06	Sodium hydroxide	1310-73-02	Harmful (h) Corrosive (i)	To be confirmed in the detailed design stage	To be confirmed in the detailed design stage	Used as detergent in drum washing	Inorganic	R35	S26 S37/39 S45	No
A07	Trigene II (disinfectant cleaner)	None applicable for this mixture	None applicable	0.1	1	Cleaning of breathing apparatus	Organic/ inorganic mixture	R66	S24/25 S37 S50	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.2 Waste Transfer Station **(Part 2 of 3) (sheet 1 of 1): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	Ecological Aquatic				Toxicological				Radioactive
		LC_{50} mg/l	Species	EC_{50}[4] mg/l	Species	Oral LD_{50} mg/kg	Species	IV LD_{50} mg/kg	Species	Yes/No
A01	Bromine					3100 4160 2600	Mouse Rabbit Rat			No
A02	Diesel gas oil									No
A03	Fire retardant foam	>500 ppm	Fathead minnow (*Pimephales promelas*)			Non-toxic at 5000	Wistar albino rat			No
A04	Liquid Nitrogen									No
A05	Nitrogen (gas)									No
A06	Sodium Hydroxide (20% solution)									No
A07	Trigene II (disinfectant cleaner)									No

Notes (cont.): 4. Where available.

Table 8.3 Waste Transfer Station **(Part 3 of 3) (sheet 1 of 1): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
A01	Bromine		Yes	Suffocating		No	No	No	No
A02	Diesel gas oil		Yes	Mild petroleum		Yes (persistent mineral oils and hydrocarbons of petroleum origin)	No	Yes (Mineral oils and hydrocarbons) (7)	No
A03	Fire retardant foam		Yes	Mild, pleasant		No	No	No	No
A04	Liquid Nitrogen		No			No	No	No	No
A05	Nitrogen (gas)		No			No	No	No	No
A06	Sodium Hydroxide 20% solution		No			No	No	No	No
A07	Trigene II (disinfectant cleaner)		Yes	Citrus or odourless		No	No	No	No

Notes (cont.): 5. The European Commission priority candidate list.

Table 8.4 (sheet 1 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B01	Acetylene	00074-86-2	Extremely flammable (f)	0.002	0.01	Welding gas used in workshop	Organic	R5/R6, R12	S9/16/33	Yes
B02	Activated carbon and lime sorbent	1333-86-4 1305-62-0	None	134	600	Flue gas cleaning	Inorganic	None	S26 S36 S39 S41	No
B03	Ammonia	7664-41-7	Flammable (e) Corrosive (i) Irritating (j)	67.2	1762	injected into the flue gases in the boiler for NOx reduction	Inorganic	R3 R5 R10 R35 R36 R37 R38	S3/9/14 S8 S16 S24 S23 S24/25 S26 S28 S33 S36/37/39 S38 S47 S51	Yes, but quantities stored are below the thresholds set in these regulations
B04	Ammonia 25% solution	7664-41-7	Same as ammonia	200 litres	0.68	Bboiler feed water additive	Inorganic	Same as ammonia	Same as ammonia	Same as ammonia
B05	Cement	65997-15-1	Corrosive (i)	667	2133	May be used for solidification of waste ash	Inorganic	R31 R35 R36 R37 R38 R40	S22 S24/25 S26 S28 S36 S37 S39 S50 S51 S62	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.4 (sheet 2 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B06	Diesel gas oil	68334-30-5	Flammable (e) Harmful (h) Carcinogenic (l)	2	Will be confirmed during detailed design	Fuel for on-site vehicles, stationary pump motors and emergency generator	Organic	R10 R40 R58 R65 R66	S16 S43 S45 S53 S61 S62	No
B07	Fire retardant foam (Viking Supreme3G-ARC™ or similar)	Mixture – no single CAS number applicable	Irritant	To be confirmed in the detailed design stage	To be confirmed in the detailed design stage	Emergency fire fighting	Mixture of organic and inorganic components	R36/37/38 R66	S20/21 S23 S24/25 S26 S28 S36/37/39 S56 S63	No
B08	Gypsum	10101-41-4	Irritant (j)	Amount stored will be finalised in detailed design	2600	May be produced as a by-product of the flue gas cleaning process, if lime/limestone used in scrubbing system	Inorganic	R36/37/38	S3/9/14 S7/8 S20/21 S22 S24/25 S26 S27 S28 S36/37/39 S38 S41 S50 S63 S64	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.4 (sheet 3 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
BO9	Hydrochloric acid	7647-01-0	Toxic (g) Corrosive (i) Irritant (j)	10	24	Water demineralisation plant	Inorganic	R21 R23 R35 R37 R41	S3/7 S8 S9 S15 S23 S24/25 S26 S28 S36/37/39 S45 S51 S63	No
B10	Iron silicate (fayalite)	1317-71-1	Sensitising (k)	300	1600	May be used for solidification of waste ash	Inorganic	R37	S37/39 S38 S63	No
B11	Lime	1305-78-8	Harmful (h) Corrosive (i) Irritant (j)	400	5280, to be confirmed at detailed design stage	Flue gas cleaning: In combination with activated carbon at evaporating spray tower and baghouse filter, and as an alternative to limestone in the wet scrubbers	Inorganic	R20 R22 R35 R36 R37 R38 R41 R51	S3/9/14 S7 S8 S22 S24/25 S26 S27 S28 S30 S36/37/39 S38 S50 S56 S62 S63	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94.

Table 8 (sheet 4 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B12	Limestone	471-34-1	Sensitising (k) Carcinogenic (l) – limestone may contain silica as an impurity. Silica is considered to be a carcinogen.	667	9600, , to be confirmed at detailed design stage	Flue gas cleaning, as an alternative to lime in the wet scrubbers	Inorganic	R45 (for silica impurities)	None	No
B13	Liquid nitrogen	7727-37-9	Not applicable	(10 000 litres)	Only used in case of shutdown of N_2 generator	Inert material used for residual fill in transfer operations	Inorganic	R34	S18 S24 S37 S39	No
B14	Mineral oil	Will depend on exact formulation	Harmful (h) Irritant (j)	900 litres	53,080 litres	Lubrication of moving parts	Organic	R20/22 R36/37/38	S3/9/14 S7 S15 S23 S24/25 S26 S28 S36/37/39 S38 S62 S63	No
B15	Natural gas (Typical composition by weight: Methane 98% Carbon dioxide 0-5% Nitrogen 0-5% Ethane 1% Odourant trace)	Methane: 74-82-8 CO_2: 124-38-9 Nitrogen: 7727-37-9 Ethane: 74-84-0	Extremely flammable (c) Harmful (h) (as simple asphyxiant)	None	Estimated 400,000Nm³	Used in start-up operations, and as auxiliary fuel	Organic	R12 R16 R18 R20	S14 S23 S33 S36/37/39 S38 S50 S51 S63	No

Notes:
1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8 (sheet 5 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B16	Nitrogen (gas)	7727-37-9	Not applicable	(1-2 m³)	To be confirmed in detailed design	Generated on site, used as inert blanketing for incoming waste solvents; may be produced by the selective non-catalytic reduction (injection of ammonia or urea in the boiler)	Inorganic		S18	No
B17	Odour suppressant (exact product not yet decided on)	None available	Not applicable	0.1	1	May be used in the waste bunkers during periods when the fans producing under pressure are not operating	Not yet known	Not yet known	Not yet known	No
B18	Oxygen	07782-44-7	Strongly supports combustion	0.005	0.025	Welding gas used in workshop	Inorganic	R8	S9 S17	Yes
B19	Sand	None available for this mixture	None applicable	To be confirmed at detailed design stage	12 000	Fluidised bed furnace	Inorganic	Not applicable	S22 S25 S62	No
B20	Sodium hydroxide (demineralisation agent)	1310-73-2	Harmful (h) Corrosive (i)	To be confirmed at detailed design stage	To be confirmed at detailed design stage	May be used in the wet scrubber system instead of lime/limestone Demineralisation additive.	Inorganic	R35	S26 S37/39 S45	No
B21	Sodium sulphite	7757-83-7	Irritant (j)	1	0.27	Boiler feed water additive	Inorganic	R34	S22 S26 S27 S36/37/38	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.4 (sheet 6 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B22	Trisodium phosphate	7601-54-9	Irritant (j)	1.5	0.16	Boiler feedwater additive	Inorganic	R22 R34 R36/37/38	S3/9/14 S7 S8 S15 S18 S20/21 S23 S24/25 S26 S27 S28 S36/37/39 S38 S41 S62 S63 S64	No
B23	Trigene II (disinfectant cleaner)	None applicable for this mixture	None applicable	0.1	1	Cleaning of breathing apparatus	Organic/ inorganic mixture	R66	S24/25 S37 S50	No
B24	Water	7732-18-5	None applicable	To be confirmed in detail design	120,000	In boiler, at various stages in flue gas cooling and cleaning systems, and for general maintenance and cleaning	Inorganic	None applicable	S50	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.4 (sheet 7 of 7) Waste-to-Energy Plant **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
B25	Wet lignite coke pellets	None available	None applicable	134	134	May be used in tail end flue gas cleaning system	Organic	None applicable	None applicable	No
B26	Urea	57-13-6	Harmful (h) Irritant (j) Dangerous for the environment (o)	67	533	Injected into the flue gases in the boiler for NOx reduction	Organic	R22 R36/37/38 R51 R55	S3 S8 S22 S24/25 S26 S27 S29/56 S38 S41 S50 S63 S64	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.5 (sheet 1 of 1) Waste-to-Energy Plant **(Part 2 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	Ecological Aquatic				Toxicological				Radioactive
		LC_{50} mg/l	Species	EC_{50}[4] mg/l	Species	Oral LD_{50} mg/kg	Species	IV LD_{50} mg/kg	Species	Yes/No
B01	Acetylene									No
B02	Activated carbon and lime sorbent									No
B03	Ammonia	189 (48 hour) 0.97 (24 hour) 8.2 (96 hour)	Daphnia magnia Rainbow trout Fathead minnow							No
B04	Ammonia 25% solution	Same as ammonia	Same as ammonia							No
B05	Cement									No
B06	Diesel									No
B07	Fire retardant foam	>500 ppm	Fathead minnow (*Pimephales promelas*)			Non-toxic at 5000	Wistar albino rat			No
B08	Gypsum					4300	Rat			No
B09	Hydrochloric acid					900	Rabbit			No
B10	Iron silicate (fayalite)									No
B11	Lime									No
B12	Limestone									No
B13	Liquid nitrogen									No
B14	Mineral oil									No
B15	Natural gas									No
B16	Nitrogen (gas)									No
B17	Odour suppressant									No
B18	Oxygen									No
B19	Sand									No
B20	Sodium hydroxide					500	Rabbit			No
B21	Sodium sulphite	460	Fish	273	Daphia magna	2610	Rat	175	Mussel	No
B22	Trisodium phosphate	1 120	Bluegill Trout			4150	Rat			No
B23	Trigene II (disinfectant cleaner)									No
B24	Water									No
B25	Wet lignite coke pellets									No
B26	Urea					>15x10^6 >11.5x10^6	Rat Mouse			No

Notes (cont.): 4. Where available.

Table 8.6 (sheet 1 of 3) Waste-to-Energy Plant **(Part 3 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
B01	Acetylene		Yes	Garlic like		No	No	No	No
B02	Activated carbon and lime sorbent		No			No	No	No	No
B03	Ammonia		Yes	Strong, similar to 'smelling salts'	(20 ppm)	No	Yes (Substances which have an adverse effect on the oxygen balance, particularly: ammonia, nitrites) (7)	No	Yes (Ammonia, nitrites) (7)
B04	Ammonia 25% solution		yes	Same as ammonia	Same as ammonia	No	Same as ammonia	No	Yes (Ammonia, nitrites) (7)
B05	Cement		No			No	No	No	No
B06	Diesel gas oil		Yes	Mild petroleum		Yes (persistent mineral oils and hydrocarbons of petroleum origin) (7)	No	Yes (Mineral oils and hydrocarbons) (7)	No
B07	Fire retardant foam		Yes	Mild, pleasant		No	No	No	No
B08	Gypsum		No			No	No	No	No
B09	Hydrochloric acid		Yes	Sharp, irritating	350 to 74 000	No	No	No	No
B10	Iron silicate		No			No	No	No	No
B11	Lime		No			No	No	No	No

Notes (cont.): 5. The European Commission priority candidate list.

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Table 8.6 (sheet 2 of 3) **Waste-to-Energy Plant (Part 3 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
B12	Limestone		No			Yes, Substances in respect of which it has been proved that they possess carcinogenic properties in or via the aquatic environment (4) – (for the silica impurities)	No	Yes, Substances which possess carcinogenic, mutagenic or teratogenic properties in or via the aquatic environment (4) – (for the silica impurities)	No
B13	Liquid nitrogen		No			No	No	No	No
B14	Mineral oil		No			Yes (Persistent mineral oils and hydrocarbons of petroleum origin) (7)	Yes (Non-persistent mineral oils and hydrocarbons of petroleum origin) (6)	Yes (Mineral oils and hydrocarbons) (7)	No
B15	Natural gas		Yes (with odourant)	Characteristic	(If mercaptan odourant used, 1 ppb)	No	No	No	No
B16	Nitrogen (gas)		No			No	No	No	No
B17	Odour suppressant		Yes	Agreeable		No	No	No	No
B18	Oxygen		No			No	No	No	No
B19	Sand		No			No	No	No	No
B20	Sodium hydroxide		No			No	No	No	No
B21	Sodium sulphite		No			No	No	No	No

Notes (cont.): 5. The European Commission priority candidate list.

Table 8.6 (sheet 3 of 3) Waste-to-Energy Plant **(Part 3 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
B22	Trisodium phosphate		No			No	Yes 5. (Inorganic compounds of phosphorus and elemental phosphorus)	No	Yes 5. (Inorganic compounds of phosphorus and elemental phosphorus)
B23	Trigene II (disinfectant cleaner)		Yes	Citrus or odourless		No	No	No	No
B24	Water		No			No	No	No	No
B25	Wet lignite coke pellets		No			No	No	No	No
B26	Urea		No	If damp, then ammonia type odour		No	Yes 8. (Substances which have an adverse effect on the oxygen balance, particularly: ammonia, nitrites)	No	Yes 7. (Ammonia and Nitrites)

Notes (cont.): 5. The European Commission priority candidate list.

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Table 8.7 (sheet 1 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C01	Acetone	67-64-1	Flammable (e) Harmful (h) Irritant (j) Mutagenic (m) Toxic for reproduction (n)	To be confirmed in detailed design	To be confirmed in detailed design	Gas chromatography (GC) testing of incoming waste streams	Organic	R10 R11 R20/22 R36/37/38 R46 R62 R66 R67	S3 S7/9 S16 S26 S38 S36/37/39 S50	No
C02	Argon gas	7440-37-1	(Potential asphyxiant if oxygen is displaced) Harmful (h)	To be confirmed in detailed design	(2000 m^3)	Atomic Absorption Spectrometry (AAS) testing of incoming waste streams	Inorganic	R20	S3/9/14 S7 S15 S16 S38	No
C03	Buffer solutions	Varies with individual components of the solutions	Depends on the properties of the buffer solutions used	To be confirmed in detailed design	To be confirmed in detailed design	pH testing of incoming waste streams	May be organic or inorganic, depending on components of the solutions used	Depends on the properties of the buffer solutions used	Depends on the properties of the buffer solutions used	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.7 (sheet 2 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C04	Carbon disulphide	75-15-0	Extremely flammable (c) Toxic (g) Harmful (h) Toxic for reproduction (n)	To be confirmed in detailed design	To be confirmed in detailed design	Gas chromatography testing of incoming waste streams	Inorganic	R12 R18 R21 R23/25 R34 R36/38 R48 R62 R63	S3/9/14 S7 S15 S16 S23 S24/25 S26 S27 S33 S36/37/39 S45 S46 S60	No
C05	Dichloromethane (DCM)	75-09-2	Flammable (e) Harmful (h) Irritant (j) Carcinogenic (l) Toxic for reproduction (n)	To be confirmed in detailed design	To be confirmed in detailed design	Gas chromatography testing of incoming waste streams	Organic	R10 R20/21/22 R34 R36/37/38 R45 R61 R62	S7/9 S23 S24/25 S36/37/39 S38 S41 S46 S50 S60	No
C06	Helium gas	7740-59-7	(Potential asphyxiant if oxygen is displaced) Harmful (h)	To be confirmed in detailed design	(200m^3)	Gas chromatography testing of incoming waste streams	Inorganic	R20	S3/9/14 S7 S15 S38	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.7 (sheet 3 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C07	Hexane	110-54-3	Flammable (e) Toxic (g)	To be confirmed in detailed design	To be confirmed in detailed design	Gas chromatography testing of incoming waste streams	Organic	R10 R18 R23/25 R36/37/38 R48 R51/53 R61 R62 R65 R67	S7/9 S13 S16 S17 S23 S24/25 S26 S29 S33 S36/37/39 S38 S41 S50 S60 S61 S62	No
C08	Hydrogen gas	1333-74-0	Extremely flammable (c) (Potential asphyxiant if oxygen is displaced) Harmful (h)	To be confirmed in detailed design	To be confirmed in detailed design	Used in flame ionisation detector only for testing of incoming waste streams	Inorganic	R2 R12 R20 R44	S3/7 S9 S15 S16 S23 S33 S38	No
C09	Isopropyl alcohol (2-propanol)	67-63-0	Flammable (e) Toxic (g) Irritant (j)	To be confirmed in detailed design	To be confirmed in detailed design	Used in bomb calorimeter for testing of incoming waste streams	Organic	R5 R11 R18 R25 R36/37/38 R41 R67	S7 S16 S23 S24/25 S26 S27 S36/37/39 S38 S60	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.7 (sheet 4 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C10	Karl Fischer reagent 5	Ingredient CAS numbers: Pyridine: 110-86-1 Iodine: 7553-56-2 Sulphur dioxide: 7446-09-5 2-Methoxyethanol: 109-86-4	Flammable (e) Toxic (g) Toxic for reproduction (n)	To be confirmed in detailed design	(20 litres)	Used in titration for analysis of incoming waste streams	Mixture of organics and inorganics	R10 R19 R21 R22/23 R34 R36/37 R41 R55 R62 R63	S3/9/14 S7 S15 S21 S23 S24/25 S26 S27 S28 S29/56 S33 S36/37/39 S38 S53 S60 S62	No
C11	Methanol	67-56-1	Flammable (e) Very toxic (f) Irritant (j)	To be confirmed in detailed design	(20 litres)	Used in titration for analysis of incoming waste streams	Organic	R5 R11 R16 R23/24/25 R28 R36/37/38 R39 R55	S3/14 S7 S13 S16 S17 S23 S24/25 S26 S28 S33 S36/37/39 S38 S45 S50 S60 S62	Yes

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.7 (sheet 5 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C12	Nitrogen gas	7727-37-9	Not applicable	To be confirmed in detailed design	(850m^3)	Used in Fourier Transform Infrared Spectroscopy (FTIR), Gas Chromatography (GC) and Flame Ionisation Detector (FID) analysis of incoming waste streams	Inorganic		S18	No
C13	Nitrogen 70%, Carbon dioxide 16% and Oxygen 14% gas mixture	7727-37-9 124-38-9 7782-44-7	Harmful (h)	To be confirmed in detailed design	To be confirmed in detailed design	Used in Fourier Transform Infrared Spectroscopy (FTIR) analysis of incoming waste streams	Inorganic	R20	S15 S18 S24 S37/39 S38 S51 S63	No
C14	Nitrogen and Hydrogen chloride gas mixture	7727-37-9 7647-01-0	Toxic (g) Corrosive (i) Irritant (j)	To be confirmed in detailed design	To be confirmed in detailed design	Used in Fourier Transform Infrared Spectroscopy (FTIR) analysis of incoming waste streams	Inorganic	R21 R23 R35 R37 R41	S3/7 S8 S9 S15 S23 S24/25 S26 S28 S36/37/39 S51 S63	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.7 (sheet 6 of 6) Laboratory **(Part 1 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	Organic/ Inorganic	R[3] - Phrase	S[3] - Phrase	Seveso Yes/No
C15	Nitrogen, Nitrous oxide, Carbon monoxide and Sulphur dioxide gas mixture	7727-37-9 10024-97-2 630-08-0 7446-09-5	Oxidising (b) Flammable (e) Toxic (g) Harmful (h) Corrosive (i)	To be confirmed in detailed design	To be confirmed in detailed design	Used in Fourier Transform Infrared Spectroscopy (FTIR) analysis of incoming waste streams	Inorganic	R5 R12 R18 R20 R23 R34 R48/23 R61 R67	S3 S7/9 S15 S16 S18 S23 S26 S33 S36/37/39 S38 S45 S51 S53	No
C16	Nitrogen and Methane gas mixture	7727-37-9	Flammable (e) Harmful (h)	To be confirmed in detailed design	To be confirmed in detailed design	Used in Flame Ionisation Detector (FID) analysis of incoming waste streams	Mixture of organic and inorganic gases	R2 R10 R18 R20 R67	S3 S7/9 S15 S16 S18 S23 S36/37/39 S63	No
C17	Oxygen gas	7782-44-7	Oxidising (b)	($100m^3$)	($100m^3$)	Used in bomb calorimeter analysis of incoming waste streams	Inorganic	R8 R9 R37 R67	S3/9/14 S17 S63	No

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

Table 8.8 (sheet 1 of 2) Laboratory **(Part 2 of 3):**

Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site

Ref. Nº or Code	Material/ Substance[2]	Ecological Aquatic				Toxicological				Radioactive
		LC_{50} mg/l	Species	EC_{50}[4] mg/l	Species	Oral LD_{50} mg/kg	Species	IV LD_{50} mg/kg	Species	Yes/No
C01	Acetone					5800	Rat			No
C02	Argon									No
C03	Buffer solutions									No
C04	Carbon disulphide									No
C05	Dichloromethane									No
C06	Helium gas									No
C07	Hexane	4	Goldfish			28 710	Rat	9100	Rat	No
C08	Hydrogen gas									No
C09	Isopropyl alcohol (2-propanol)	11 160	Pimephales promelas (fathead minnow)			5045	Rat			No
C10	Karl Fischer reagent 5	>100 for methoxyethanol component >10 and <100 for pyridine component	Fish			2370 for methoxyethanol component 891 for pyridine component 14 for iodine component	Rat			No
C11	Methanol	29 400	Pimephales promelas (Fathead minnow)			5628 7300 7000	Rat Mouse Monkey			No
C12	Nitrogen gas									No
C13	Nitrogen 70%, Carbon dioxide 16% and Oxygen 14% gas mixture									No
C14	Nitrogen and Hydrogen chloride gas mixture					900	Rabbit			No

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Notes (cont.): 4. Where available.

Table 8.8 (sheet 2 of 2) Laboratory **(Part 2 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. N° or Code	Material/ Substance[2]	Ecological Aquatic				Toxicological				Radioactive
		LC_{50} mg/l	Species	EC_{50}[4] mg/l	Species	Oral LD_{50} mg/kg	Species	IV LD_{50} mg/kg	Species	Yes/No
C15	Nitrogen, Nitrous oxide, Carbon monoxide and Sulphur dioxide gas mixture	Carbon monoxide: 75 (LC100)	Orange spotted sunfish (*leptomis humilis*)							No
		Sulphur dioxide: 3	Atlantic menhaden (*Brevoortia tyrannus*)							
C16	Nitrogen and Methane gas mixture									No
C17	Oxygen gas									No

Notes (cont.): 4. Where available.

Table 8.9 (sheet 1 of 2) Laboratory **(Part 3 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. N^{o} or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m^3	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
C01	Acetone	3	Yes	Sweet	105×10^6	No	No	No	No
C02	Argon		No			No	No	No	No
C03	Buffer solutions								
C04	Carbon disulphide		Yes	Strong garlic-type		No	No	Yes (substances which possess carcinogenic, mutagenic or teratogenic properties in or via the aquatic environment) (4)	No
C05	Dichloromethane		Yes	Chloroform-type		Yes (Organohalogen compounds and substances which may form such compounds in the aquatic environment) (1) (Substances in respect of which it has been proved that they possess carcinogenic properties in or via the aquatic environment) (4)	No	Yes (Organohalogen compounds and substances which may form such compounds in the aquatic environment) (1) (Substances which possess carcinogenic properties in or via the aquatic environment) (4)	No
C06	Helium gas		No			No	No	No	No
C07	Hexane		Yes	Mild, gasoline-like		No	No	No	No
C08	Hydrogen gas		No			No	No	No	No
C09	Isopropyl alcohol (2-propanol)		Yes	Alcoholic		No	No	No	No

Notes (cont.): 5. The European Commission priority candidate list.

Table 8.9 (sheet 2 of 2) Laboratory **(Part 3 of 3): Details of Process related Raw Materials, Intermediates, Products, etc., used or generated on the site**

Ref. Nº or Code	Material/ Substance[2]	TA Luft Class 1, 2 or 3	Odour			EU Lists I and II (Tick and specify Group/Family Number)			
			Odourous Yes/No	Description	Threshold µg/m³	Dangerous Substances Directive 76/464/EEC		Groundwater Directive 80/68/EEC	
						List I	List II +129[5]	List I	List II
C10	Karl Fischer reagent 5		Yes	Pyridine-like		No	No	Yes (Substances which possess carcinogenic, mutagenic or teratogenic properties in or via the aquatic environment) (4)	No
C11	Methanol		Yes	Slight alcoholic	7.92×10^0 (National Safety Council, USA) 1.584×10^0 (National Institute for Occupational Safety and Health, USA)	No	No	No	No
C12	Nitrogen gas		No			No	No	No	No
C13	Nitrogen 70%, Carbon dioxide 16% and Oxygen 14% gas mixture		No			No	No	No	No
C14	Nitrogen and Hydrogen chloride gas mixture		Yes	Sharp irritating suffocating acidic	350 to 74 000	No	No	No	No
C15	Nitrogen, Nitrous oxide, Carbon monoxide and Sulphur dioxide gas mixture		Yes	Slightly sweet; irritating		No	No	No	No
C16	Nitrogen and Methane gas mixture		No			No	No	Yes (Mineral oils and hydrocarbons) (7)	No
C17	Oxygen gas		No			No	No	No	No

Notes (cont.): 5. The European Commission priority candidate list.