

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: APROCHIM City: GREZ EN BOUERE Country: FRANCE <i>(Provide address information in Block IV)</i></p>
2	<p>Licence / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes":</p> <p>(i) Nature of licence / authorization:</p> <p>(ii) Please submit the licensing history <i>(please attach to this questionnaire)</i></p> <p>Issuing authority <i>(name)</i>:</p> <p><input type="checkbox"/> National <input type="checkbox"/> Local or <input type="checkbox"/> Independent</p>
3	<p>Please provide information on storage at the facility including:</p> <p>Capacity for the various PCB waste and equipment types:</p> <p>Method:</p> <p>Holding time:</p>
4	<p>Worker protection <i>(Please summarize protective measures applied during treatment of PCB wastes)</i></p> <p>Protective Mask and equipment for workers</p> <p>Does the facility have an accident book? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Most frequent cause(s) of incidents involving PCBs: bruises (hoematoma)</p>

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Opinion box - PCB Management issues *(Please describe briefly)*

What are your major concerns?

Certification ISO 9001 for Quality & 14001 for environment & OHSAS 18001 for security

Continuous improvement of procedures and operating instructions

Can you identify research and development needs in PCB management that would be beneficial for your region and waste managers worldwide?

Block II Types of PCB wastes

Part A: Treatment of PCB containing equipment/material

Part A1: Metallic Parts

A1.1	Types of metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit: PPM		unit: T
		min	max	
	<input checked="" type="checkbox"/> Transformers - capacitors	50	illimited	15000 T
<input checked="" type="checkbox"/> Mineral oil contaminated by PCB	50 ppm	2000 ppm	2000 T	
<input type="checkbox"/> Others:				
<i>Please specify any other limitation on waste accepted:</i>				
A1.2	<p>Presentation of metallic equipment/material</p> <p>In what form must the metallic PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: Boxes - containers- transformers - capacitors</p> <p><input type="checkbox"/> Other constraints:</p>			

A1.3

Treatment of metallic PCB equipment/material

Immediate destruction of metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and recycling)

Part A: Treatment of PCB containing equipment/material

Part A2: Non-metallic Parts

A2.1	Types of non-metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit:		unit:
		min	max	
	<input checked="" type="checkbox"/> PCB-containing materials (clothes, cables, etc.)	50 ppm	illimited	
	<input type="checkbox"/> PCB-contaminated residues, sludges	0	0	0
	<input type="checkbox"/> PCB-contaminated soils and sediments	0	0	0
	<input checked="" type="checkbox"/> Packaged / drummed waste	-	-	-
	<input type="checkbox"/> Other:			
<p><i>Please specify any other limitation on waste accepted:</i></p>				
A2.2	<p>Presentation of non-metallic equipment/material</p> <p>In what form must the non-metallic PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: Boxes - containers</p> <p><input type="checkbox"/> Other constraints:</p>			

A2.3

Treatment of non-metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated non-metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and Recycling)

Part B: Treatment of PCB oils and PCB waste oils

B1	Types of PCB oils and PCB waste oils treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i> unit: PPM		Quantity <i>(specify the unit)</i> unit: T
		min	max	
<input checked="" type="checkbox"/>	100 % PCB oils (by ARKEMA – TOTAL GROUP)	//	//	5000 T
<input checked="" type="checkbox"/>	Mineral oils contaminated by PCB	50	2000	2000 T
<input type="checkbox"/>	Waste oils contaminated by PCB	-		
<input type="checkbox"/>	Other:			
<p><i>Please specify any other limitation on waste accepted:</i></p>				
B2	<p>Presentation of PCB oils and PCB waste oils</p> <p>In what form must the PCB oils and PCB waste oils be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: containers</p> <p><input type="checkbox"/> Other constraints:</p>			
B3	<p>Treatment of PCB oils and PCB waste oils</p> <p>Please specify the applied technology for the destruction of PCB oils and PCB waste oils in Part III</p>			

Part C: Reuse & Recycling of decontaminated PCB equipment/material

<p>C1</p>	<p>Types decontaminated PCB equipment/material treated:</p>	<p>Limitation on waste accepted <i>(please specify, if appropriate)</i></p> <p>Quantity <i>(specify the unit)</i></p> <p>unit: 15000 T (WHOLE WEIGHT)</p>
	<p><input checked="" type="checkbox"/> Transformers</p>	<p>See above</p>
	<p><input checked="" type="checkbox"/> Capacitors</p>	<p>See above</p>
	<p><input checked="" type="checkbox"/> Materials (clothes, cables, etc.)</p>	<p>See above</p>
	<p><input type="checkbox"/> Residues, sludges</p>	<p>See above</p>
	<p><input checked="" type="checkbox"/> Soils and sediments</p>	<p>See above</p>
	<p><input checked="" type="checkbox"/> Other: switch cells</p>	<p>See above</p>
	<p><i>Please specify any other limitation on waste accepted:</i></p>	
<p>C2</p>	<p>Presentation of decontaminated PCB equipment/material</p> <p>In what form must the decontaminated PCB equipment/material be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: containers</p> <p><input type="checkbox"/> Other constraints:</p>	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? Yes No

If 'Yes', please specify the applied technology in Part III

Is the decontaminated PCB equipment/material disposed of? Yes No

If 'Yes', please specify: Revalorization

Transport to the disposal site? Yes No

If 'Yes':

International transport

National transport

Location of disposal site:

Please provide a short description of disposal site:

Copper and fero silicium for recycling to foreign countries

Block III		Detailed information on applied technologies
1	The following description refers to Block II, Part:	Type of PCB waste or decontaminated equipment/material:
	<input checked="" type="checkbox"/> A1 (Treatment of metallic PCB equipment/material)	Solvent treatment
	<input checked="" type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	Incineration
	<input checked="" type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	1/ PCB Liquid : incinerated by ARKEMA on its St Auban site (France). This plant recovers a chemical product from the waste for subsequent re-use in industry 2/ PCB Waste Oil : Sodium Reduction by Aprochim
	<input checked="" type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	Recycling in the foundry
2	<p>Applied technologies (Please specify the technology used for disposal):</p> <p><input type="checkbox"/> Pyrolysis / gasifiers</p> <p><input type="checkbox"/> Gas Phase Chemical Reduction (GPCR)</p> <p><input type="checkbox"/> Base Catalysed Decomposition (BCD)</p> <p><input checked="" type="checkbox"/> Sodium Reduction for oil under 10000 PPM</p> <p><input type="checkbox"/> Super-Critical Water Oxidation (SCWO)</p> <p><input type="checkbox"/> Plasma Arc</p> <p><input type="checkbox"/> Molten Salt Oxidation</p> <p><input type="checkbox"/> Solvated Electron Technology</p> <p><input type="checkbox"/> Retrofilling</p> <p><input checked="" type="checkbox"/> Other:</p> <p>Type of technology (1-sentence description): Physico-Chemical Treatment for solid density</p> <p>Description of the technology please provide additional information as appropriate (summarize here and, if necessary, attach documentation)</p> <p>Commissioned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Year:</p> <p>Can the technology be used in a mobile facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	

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State of development

Does the technology exist as an industrial unit? Yes No

If "No", please indicate when it will become operational:

If "Yes", please indicate how many units exist: 2

In what countries: SPAIN - JAPAN

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Pretreatment:

Does the technology require any pretreatment procedures? Yes No

If "Yes", please specify required pretreatment procedures:

- Thermal Desorption
- Dilution
- Low Temperature Rinsing
- Electro-osmosis
- Draining
- Dismantling/Shredding
- Other:

5	Byproducts		
	What byproducts does the technology produce? <i>(please specify below)</i>		
	Byproduct	Kind	Amount
	Liquids:	Decontaminated oils under 10000 PPM	L per tonnes of waste treated
	Solids:	Valorization of copper - fero silicium blocks	kg per tonnes of waste treated
Air:		m ³ per tonnes of waste treated	
<p>Does the technology allow all byproducts to be monitored for POPs*/PTS** before release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are any of the byproducts classified as other sorts of hazardous wastes? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "Yes" please specify: cellulose parts (wood – paper – plastic)</p> <p>What volumes of such byproducts are generated by handling a unit volume of PCB wastes: 5%</p> <p>Can third party monitoring data be provided? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If "Yes", please attach to this questionnaire.</i></p>			
<p>How are byproducts disposed of? <i>(please describe briefly)</i></p> <p>- valorization 95% / - incineration 5%</p>			
6	Efficiency		
	<p><i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): 100 %</p>		

* POPs: Persistent Organic Pollutants
 ** PTS: Persistent Toxic Substances

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Monitoring & Control of releases

What technologies are used to monitor releases : internal & external

Air: see above

Effluents: see above

Solids: see above

Are all releases monitored for POPs/PTS before release? Yes No

If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? Yes No

Are any of the releases classified as hazardous wastes? Yes No

If "Yes" please specify:

What technologies are used/ required to monitor and treat any such releases prior to release: 5% of cellulose

What volumes of such releases are generated by handling a unit volume of PCB wastes:

Is third party monitoring data available? Yes No

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants
** PTS: Persistent Toxic Substances

How are releases disposed of? *(please describe briefly)*

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Disposal costs

What are the *approximate* costs for applying the technology per unit[‡], **including** costs for all technical pretreatment steps, **excluding** all costs **not** related to the technical application of the technology (transport costs, costs for disposal of decontaminated transformers/capacitors/materials, etc.)?

Please specify type of treated/disposed PCB equipment/material/oil below:

	Costs per unit [‡]	Currency
a) Drained Transformer (metallic mass)	0,92 / kg	€
b) PCB Liquid	0,51 / kg	€
c) Capacitors	1,80 / kg	€
d) Mineral oils with PCB	0,30 / kg	€
e)		
f)		
g)		

[‡] Specify the unit for a) to g):

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Treatment capacities and scaling (*tonnes per year for main waste & equipment types*)

Capacity of existing facilities: units[‡] per year : according to agreement ref. 2002-P-1222 capacity (form to reach you by post)

Can the technology be adapted to higher or lower capacities? Yes No

If "Yes":

(i) What is the capacity of the smallest commercially viable facility: 15000 units[‡] per year

(ii) What is the capacity of the largest commercially viable facility: 30000 units[‡] per year

Does the adaptation will cause additional costs? Yes No

If "Yes" specify the increase in costs for the adaptation (%) of the initial costs:

(i) For smaller plants: %

For larger plants: %

[‡] Please specify the unit:

Block IV**Facility: Address and Service Information****1**

Facility Name: APROCHIM

Address: ZI La Prommenade

City/Town: Grez en Bouère

P.O. Box:

District/State: 53290 (Mayenne)

Country: France

Telephone: (00 33) 2 43 09 14 50

Fax: (00 33) 2 43 70 51 89

Email: contact@aprochim.fr

Web site:

Person completing form

Name: Kieffer Philippe

Position: Commercial Director

Parent Company (*if different*)

Address:

City/Town:

P.O. Box:

District/State:

Country:

Telephone:

Fax:

Email:

2	Other Services offered by the company <input checked="" type="checkbox"/> Laboratory analysis / testing <input checked="" type="checkbox"/> PCB waste packaging for shipment <input checked="" type="checkbox"/> PCB classification / labeling <input type="checkbox"/> Clean-up of PCB contaminated sites <input checked="" type="checkbox"/> PCB wastes transport <input type="checkbox"/> Other PCB-related services:
3	Further information Identify any company information (brochures, notes etc...) provided separately and if you wish provide additional comments on your services in not more than 50 words: