

Form 2

Dioxins and Furans

**Send filled form to
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► IMPORTANT: See instructions before filling the form ◀

<p>SECTION 1. Have studies been undertaken to identify the major sources of dioxins/furans in your country?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Comments:

The dioxin survey was carried out 1988-1992

Reference:

Rappe C., Glas B., Kjeller L.O., Kulp S.E., de Wit C. and Melin A., 1990. Levels of PCDDs and PCDFs in products and effluent from the Swedish pulp and paper industry and chloralkali process. Chemosphere 20:1701.

Rappe C., Kjeller L.O., Kulp S.E., de Wit C., Hasselsten I., and Palm O., 1991. Levels, profile and pattern of PCDDs and PCDFs in samples related to the production and use of chlorine. Chemosphere 23, 1629-36.

Lexén K., de Wit C., Jansson B., Kjeller L.O., Kulp S.E., Ljung K., Söderström G. and Rappe C., 1993. Polychlorinated dibenzo-p-dioxin and dibenzofuran levels and patterns in samples from different Swedish industries analyzed within the Swedish dioxin survey. Chemosphere 27: 163-170.

Strandell M., Lexén K.M., de Wit C.A., Järnberg U.G., Jansson B., Kjeller L.O., Kulp S.E., Söderström G., and Rappe C., 1994. The Swedish Dioxin Survey: Summary of results from PCDD/F and coplanar PCB analyses in source-related samples. Organohalogen Compounds 20:363-366.

De Wit C.a., Lexén K. and Strandell M., 1998. The Swedish Dioxin Survey: Levels, Sources and trends of Dioxin and Dioxins-like Substances in the Swedish Environment. Part 2- Sources. Swedish EPA report, in preparation.

Date: 1993

SECTION 2.
POTENTIAL OR IDENTIFIED MAJOR SOURCES OF DIOXINS AND FURANS IN YOUR COUNTRY

Sources	Quantity released per year	Relative importance Major/Minor	Alternative processes or techniques(e.g. cleaner technologies) known to you	Relative cost and effectiveness of the alternative techniques
Asphalt mixing installations	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		



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By-products of chlorinated substances manufacture	To water 0.0005- 0.0008	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Cable incineration	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Chemical industry	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Coal combustion PE	To air 0.0006	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		

Contaminated pesticides	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Forest/grass fire	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Fuel combustion	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
High temperature processes	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Wastes incineration	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Industrial processes	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Ironworks	To air 0.005 To water 0.001- 0.005	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>		
Landfill gas incineration	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Non-Fe metal industry oil combustion	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Other contaminated chemicals (e.g. PCBs)	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Pesticides	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Sintering processes	To air 0.003	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>	Closed down in 1995	
Sludge incineration	NA	Major <input type="checkbox"/> Minor <input type="checkbox"/>		
Steel industry	To air 0.002- 0.019 wastes 0.028	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>		
Traffic emissions PE	To air 0.0002- 0.001	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Transportation PE	To air 0.0002- 0.001	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Waste incineration (Hazardous)	To air 7×10^{-6}	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Waste incineration (Municipal solid)	To air 0.003 wastes 0.001- 0.008	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Waste incineration (Medical solid)	To air 10^{-6}	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>		
Wood combustion PE	To air 0.004- 0.018	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>		



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Other: Bleached Kraft pulp	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	Quantities releases per year: To air: 0.001 To water: 0.002-0.005 In products:0.0003-0.007
Recycled paper pulp	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	In products: 0.003
Sewage Sludge	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To water: 0.0001 In wastes: 0.004
Primary non-ferrous smelters	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.0001-0.0003 In wastes: 0.0004
Secondary non-ferrous smelters	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>	To air: 0.004 In wastes: 0.002
Cement kilns	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.0004-0.002
Lime burning (slaked lime)	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.003-0.005
Cremation	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.0004-0.0007
Uncontrolled landfill fires	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>	To air: 0.003-0.03
Oil heating	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.0001-0.003
Natural gas heating	Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/>	To air: 0.00004

SECTION 3. RELEASE MONITORING

	Monitoring type	Short description(add separate page if needed)
3.1	Ambient air Yes <input type="checkbox"/> No <input type="checkbox"/>	

3.2	Ground water Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.3	Surface water Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.4	Point air Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Control programs at all municipal waste incinerators.
3.5	Point water Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.6	Soil Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.7	Ecosystem Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.8	Human Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.9	Agricultural commodity Yes <input type="checkbox"/> No <input type="checkbox"/>	
3.10	Food products Yes <input type="checkbox"/> No <input type="checkbox"/>	

Comments:

Data Source:

SECTION 4. REGULATORY ACTIONS TAKEN TO CONTROL THE USE OF THE POP

	Action type to control the manufacture, importation, distribution in commerce, use or disposal	Short description (add separate page if needed)	Reference
4.1	Public health standards or regulations <input checked="" type="checkbox"/>		
4.2	Occupational standards or regulations <input type="checkbox"/>		
4.3	Environmental standards or regulations <input checked="" type="checkbox"/>		
4.4	Guidance Document <input type="checkbox"/>		
4.5	Voluntary programme <input type="checkbox"/>		
4.6	Other (e.g., Governmental order) <input type="checkbox"/>		
4.7	No action <input type="checkbox"/>		



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Comments:

4.1- Because of the health benefits, the Swedish National Food Administration (SLV) recommends that the Swedish population eat fish 2-4 times a week. However, SLV has also issued dietary guidelines for the intake of dioxin-like compounds (PCDD/PCDF and planar PCB) recommending that the public should restrict their intake of fatty Baltic Sea fish (herring, wild salmon and sea trout in particular) and fatty fish from Lakes Vänern (salmon, Trout) and Vättern (arctic char) to at most one meal per week and avoiding consuming cod liver and burbot liver (SLV, 1995).

Because of the uncertainty in the effects of these organochlorines on the fetus, SLV recommends that girls and women planning to have children or who are pregnant avoid eating fatty fish from the Baltic Sea, Lake Vänern and Lake Vättern more than once a month (SLV, 1995; Darnerud et al, 1995). The consumption of leaner, deep-sea fish such as cod and plaice is recommended instead.

Darnerud, P.o., Wicklund Glynn A., Andersson Ö, Atuma S., Johnsson H., Linder C.E., and Becker W., 1995. Bakgrund till de reviderade kostraden: PCB och dioxiner i fisk. *Var Föda* “:10-21.

SLV (1995) Reviderade råd om fiskkonsumtion : gravida, ammande och storkonsumenter bör undvika vissa fiskar, *Var föda* 2:7-9.

4.3- In the 1970's, several technical products containing PCDD/PCDF as contaminants- PCB, pentachlorophenol and 2,4,5-T- were banned for use. Legislation from 1987; municipal waste incinerator smoke stack gases may not contain more than 0.1 ng dioxins (Eadon equivalents) per normalised cubic meter gas. All incinerators have local control programs to monitor that levels are kept below this. In the early 1990's, legislation to reduce the release of dioxins and other substances to waters outside bleached pulp and paper mills led the industry to stop using chlorine gas in the bleaching process and instead to use other, less environmentally damaging methods.

Data Source: