

## Project 6A - Manufacture of basic chemicals, except fertilizers and nitrogen compounds

Comments: Includes petrochemical industry.

CATEGORY	FACTOR	COMMENTS	
AIR	ammonia (NH <sub>3</sub> )	hazardous substance, aquatic life, human health, water quality, reference <a href="#">1</a> & <a href="#">3</a>	
	acrylonitril	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, reference <a href="#">3</a> & <a href="#">5</a>	
	aerosols	ozone, climate change	
	carbon monoxide (CO)	greenhouse effect, reference <a href="#">1</a>	
	carbon dioxide (CO <sub>2</sub> )	greenhouse effect	
	dinitrobenzenes	hazardous substance, hazardous waste constituents, human health, aquatic life, reference <a href="#">5</a>	
	dinitrotoluenes	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life, reference <a href="#">5</a>	
	ethylene oxide	potential occupational carcinogen, hazardous waste, flammable, human health, water quality, reference <a href="#">3</a>	
	heavy metals	flora, fauna, soil, human health	
	hydrocarbons		
		benzene	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
		hydrogen cyanide	hazardous substance, hazardous waste, poison gas, flammable gas, human health, reference <a href="#">5</a>
		hydrogen fluoride	hazardous substance, hazardous waste, corrosive, human health, reference <a href="#">5</a>
		hydrogen sulphide	hazardous substance, hazardous waste, flammable gas, poison, human health, aquatic life, reference <a href="#">5</a>
		methane (CH <sub>4</sub> )	greenhouse gas, volatile, reference <a href="#">1</a>
		non-methane volatile organic compounds (nmVOC)	greenhouse gas, volatile, flora, reference <a href="#">1</a>
		oxides of nitrogen (NO <sub>x</sub> ) / N <sub>x</sub> O	acid rain, climate change, flora, fauna, human health, historical sites, aquatic life reference <a href="#">1</a>
		oxides of sulphur (SO <sub>x</sub> )	
		persistent organic pollutants	reference <a href="#">4</a>
		poly aromatic hydrocarbons	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
		brominated flame retardants	
		organohalogen compounds	reference <a href="#">5</a>
		carbon tetrachloride	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
		1,2-dibromoethane	carcinogen, hazardous substance, hazardous waste, human health, flora, fauna, aquatic life
		1,2-dichloroethylene	hazardous waste, priority toxic pollutant, human health, aquatic life
		hexachlorobenzene	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, soil, aquatic life
		hexachlorobutadiene	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
		pentachlorophenol	hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
		polychlorinated biphenyl (PCB's)	carcinogen, hazardous material, hazardous waste constituents, priority toxic pollutant, human health, fauna, aquatic life, soil

CATEGORY	FACTOR	COMMENTS
	tetrachloroethylene	carcinogen, hazardous waste, priority toxic pollutant, human health, aquatic life
	trichloroethylene	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, fauna, aquatic life
	phenol	hazardous substance, hazardous waste, priority toxic pollutant, human health, aquatic life
	photochemical oxidants	climate change, ozone
	solvents	air quality, flora, human health
	other hazardous substances	human health
	particle emissions	flora, human health
	oil vapour	human health, flora, historical sites
	odour	human health
<b>WATER</b>	ammonia (NH <sub>3</sub> )	hazardous substance, aquatic life, human health, water quality, reference <a href="#">1</a> & <a href="#">3</a>
	acrylonitril	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, reference <a href="#">3</a> & <a href="#">5</a>
	dinitrobenzenes	hazardous substance, hazardous waste constituents, human health, aquatic life, reference <a href="#">5</a>
	dinitrotoluenes	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life, reference <a href="#">5</a>
	ethylene oxide	potential occupational carcinogen, hazardous waste, flammable, human health, water quality, reference <a href="#">3</a>
	hydrogen cyanide	hazardous substance, hazardous waste, poison gas, flammable gas, human health, reference <a href="#">5</a>
	hydrogen fluoride	hazardous substance, hazardous waste, corrosive, human health, reference <a href="#">5</a>
	hydrogen sulphide	hazardous substance, hazardous waste, flammable gas, poison, human health, aquatic life, reference <a href="#">5</a>
	persistent organic pollutants	reference <a href="#">4</a>
	poly aromatic hydrocarbons	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
	brominated flame retardants	
	organohalogen compounds	reference <a href="#">5</a>
	carbon tetrachloride	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
	1,2-dibromoethane	carcinogen, hazardous substance, hazardous waste, human health, flora, fauna, aquatic life
	1,2-dichloroethylene	hazardous waste, priority toxic pollutant, human health, aquatic life
	hexachlorobenzene	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, soil, aquatic life
	hexachlorobutadiene	carcinogen, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
	pentachlorophenol	hazardous substance, hazardous waste, priority toxic pollutant, human health, flora, fauna, aquatic life
	polychlorinated biphenyl (PCB's)	carcinogen, hazardous material, hazardous waste constituents, priority toxic pollutant, human health, fauna, aquatic life, soil
	tetrachloroethylene	carcinogen, hazardous waste, priority toxic pollutant, human health, aquatic life
	trichloroethylene	carcinogen, hazardous substance, hazardous waste, priority toxic pollutant, human health, fauna, aquatic life

CATEGORY	FACTOR	COMMENTS
	phenolic compounds	hazardous substance, hazardous waste, priority toxic pollutant, aquatic life, human health
	solvents	aquatic life, water quality
	heavy metals	aquatic life, water quality, human health
	oil products	aquatic life, water quality, fauna
	nutrients	aquatic life, water quality
	other hazardous substances	
	chemical oxygen demand (COD)	
	biological oxygen demand (BOD)	
	dissolved oxygen	
	total organic carbon (TOC)	
	suspended solids	
	dissolved solids	
	total solids	
	temperature	
	change in pH	
	colour	water quality
odour		
CLIMATE	changes in ambient air temperature	
	smog	
	changes in humidity	
	greenhouse gas emissions	CO <sub>2</sub> , CO, NO <sub>x</sub> , N <sub>x</sub> O, SO <sub>x</sub> , nmVOCs, CH <sub>4</sub>
FLORA	changes in natural vegetation	pollutants, project location
	disturbance of aquatic habitat	
	disturbance of plant habitat	
	disturbance of natural vegetation	
	decrease in biodiversity	
	impact of threatened species	
	changes in species population	
	changes in aquatic food web	
	changes in mammal food web	
impact on protected areas		
FAUNA	disturbance of wildlife habitat	pollutants, project location
	decrease in biodiversity	
	impact on threatened species	
	changes in species population	
	impact on threatened area	
changes in mammal food web		
SOIL	soil acidification	heavy metals, pollutants
	soil contamination	
LANDSCAPE	land use changes	
	visual aspects	
	physical composition	
	impact on sensitive lands	
HISTORICAL MONUMENTS	changes to historical sites	acid rain
HUMAN HEALTH & SAFETY	changes in ambient noise levels	
	changes in disease incidence	
	risk of spills	
	risk of surface water contamination	
	risk of ground water contamination	
	risk of explosions	

CATEGORY	FACTOR	COMMENTS
<b>CULTURAL HERITAGE</b>	cultural changes	
	land use changes	
	way of life	
<b>SOCIO- ECONOMIC</b>	changes to well being of life	
	changes to quality of life	
	quality of recreational facilities	
	quantity of recreational facilities	
	present use of natural resources	
	potential use of natural resources	
	employment opportunity	
	economic development - transboundary	

References

1. Proceedings of the EMEP Workshop on Emission Inventory Techniques, Regensburg, Germany, 2-5 July, 1991, EMEP/CCC-Report 1/91
2. Economic Commission for Europe Convention of Long-range Transboundary Air Pollution, Task Force on Heavy Metal Emissions, June 1994
3. Economic Commission for Europe, Convention on the Transboundary Effects of Industrial Accidents
4. Economic Commission for Europe, State of Knowledge Report of the UN ECE Task Force on Persistent Organic Pollutants
5. Recommendations to ECE Governments on the Prevention of Water Pollution from Hazardous Substances