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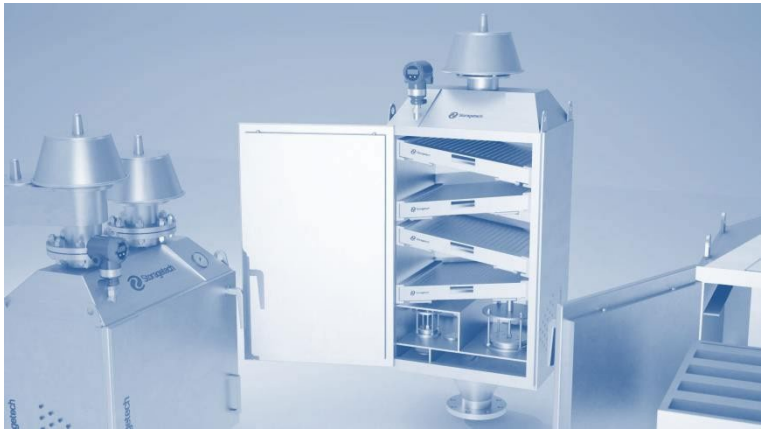
Your Specialist in Storage Tanks, Pressure Vessels & Tank Equipment

Emission Control Devices

Absorber and Adsorbers

Scrubber Webinar Video



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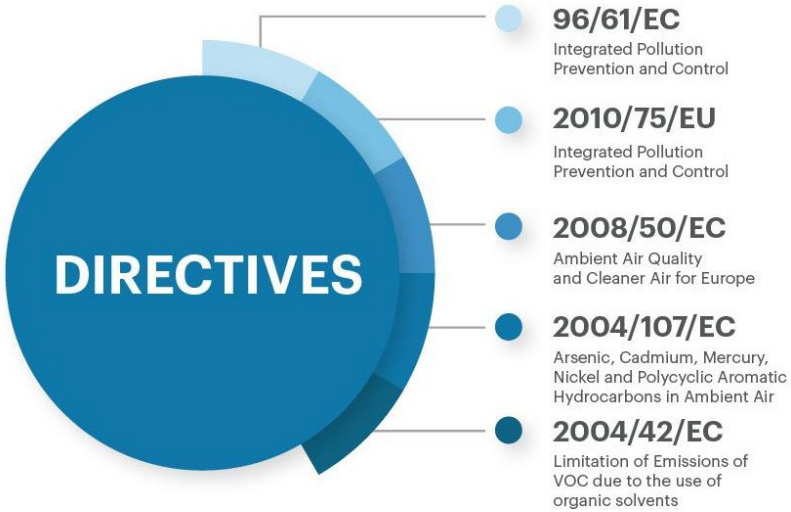
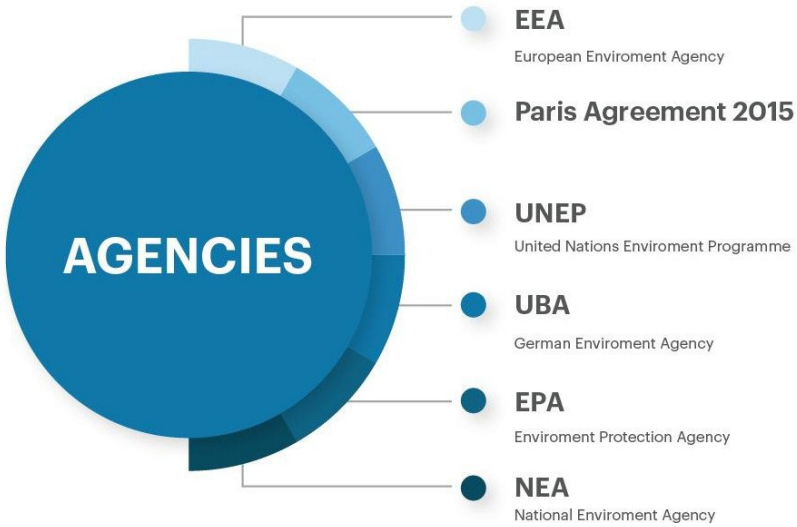
What we will talk

Standarts

WHO region	Countries in the region (n)	Countries with standards for at least one pollutant and averaging time		Countries without standards		Countries with no information	
		n	%	n	%	n	%
African Region	47	17	36	21	45	9	19
Region of the Americas	35	20	57	13	37	2	6
South-East Asian Region	11	7	64	3	27	1	9
European Region	53	50	94	2	4	1	2
Eastern Mediterranean Region	21	11	52	1	5	9	43
Western Pasific Region	27	12	44	13	48	2	7
Total	194	117	60	53	27	24	12





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Pollutants and Sources

Hazardous air pollutants, also called air toxics, include 187 pollutants listed in the Clean Air Act. EPA can add pollutants that are known or suspected to cause cancer or other serious health effects.

Examples of air toxics include:

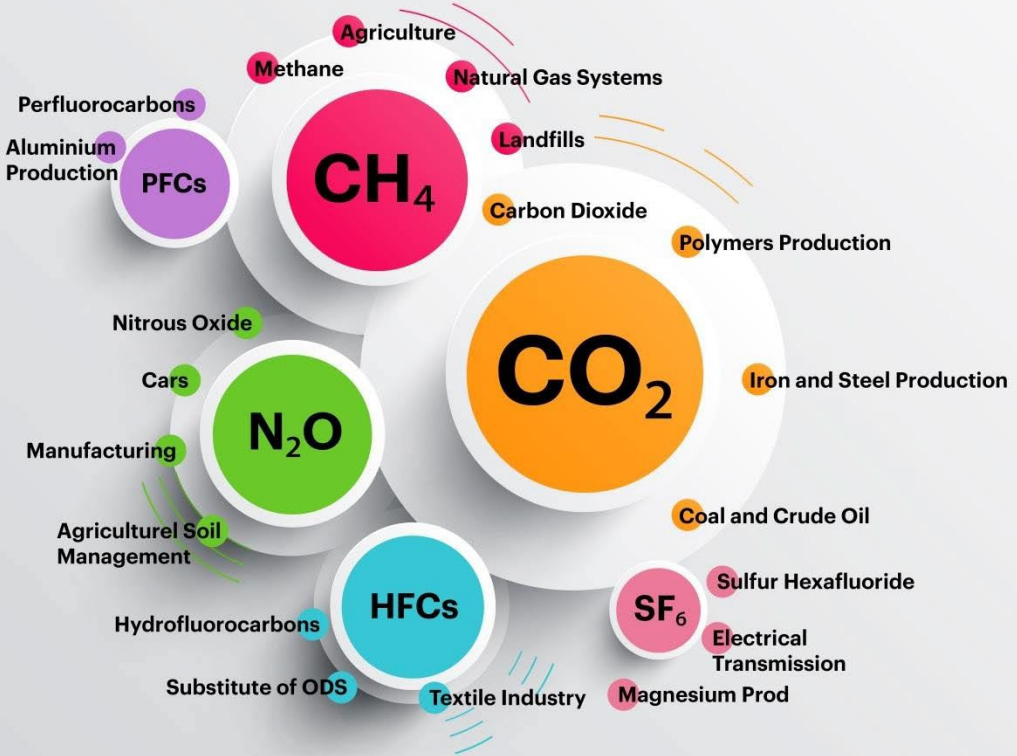
Benzene, which is found in gasoline;

Perchloroethylene, which is emitted from some dry cleaning facilities;

Methylene chloride, which is used as a solvent and paint stripper by a number of industries.

Greenhouse Gases and Sources

Each gas's GWP (Greenhouse Warming Potential) is measured against the reference gas CO_2. CO_2 is measured in million metric tons.



VOC (Volatile Organic Compounds)

Common VOCs include;

Ethanol,

Formaldehyde,

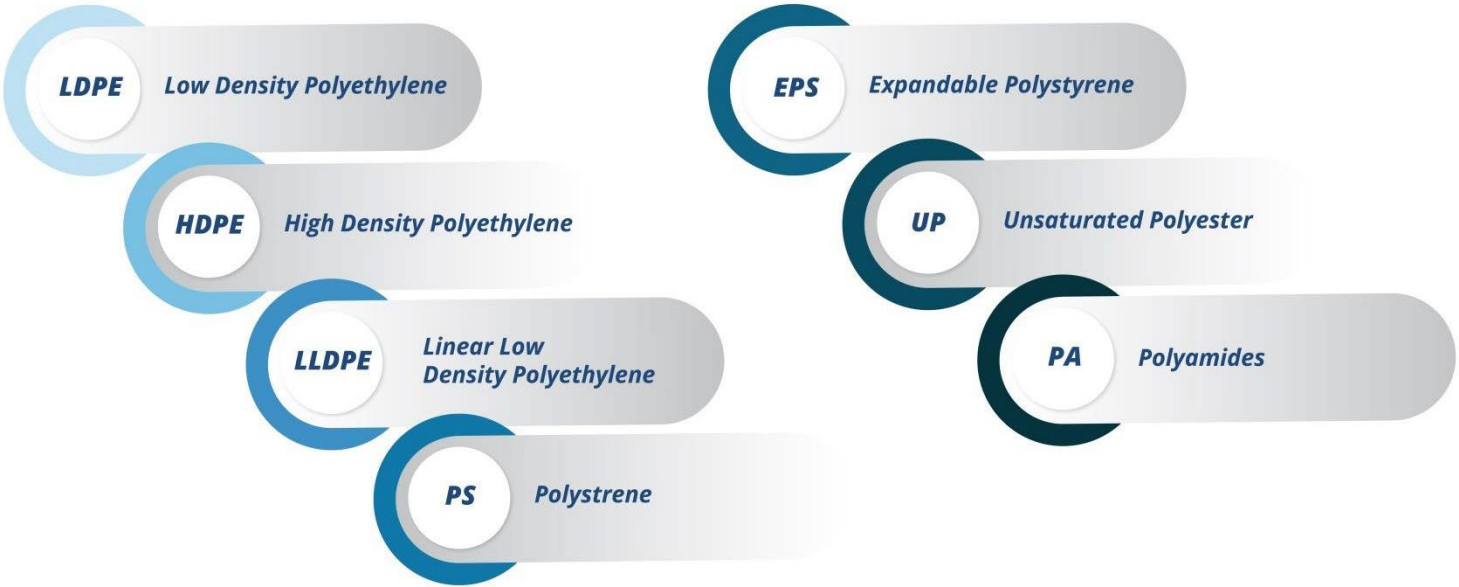
Benzene,

Toluene,

Plastic Production

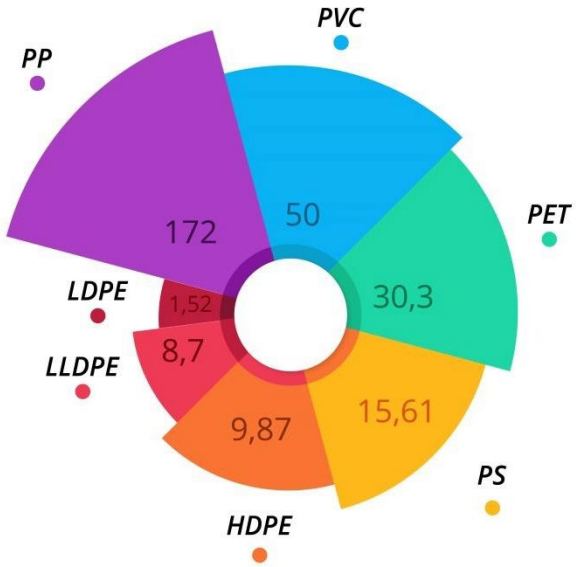
This chapter describes the methodology used in EPA's Waste Reduction Model (WARM) to estimate life-cycle greenhouse gas (GHG) emission factors for various plastics.

Plastic Productions

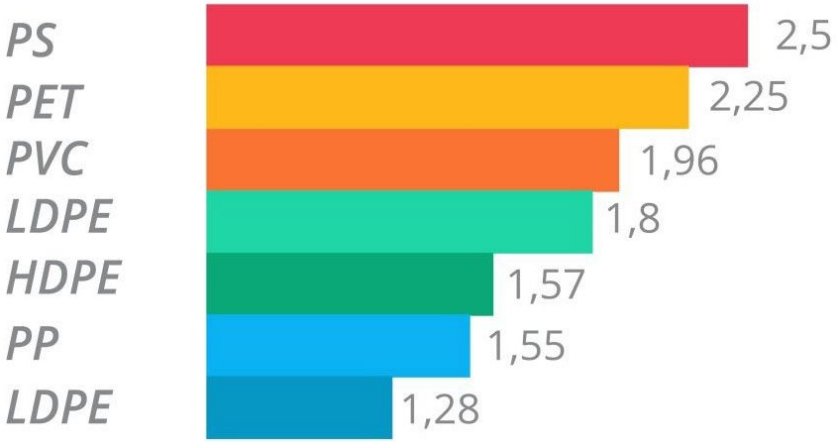


Total Plastic Production

288 million tons of plastic is produced annually.



Product Based Emissions CO_2 Equivalent



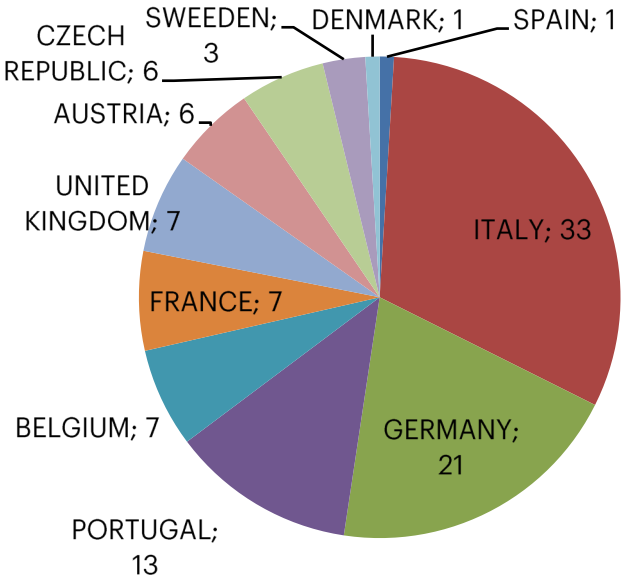
Textile Industry

The textiles industry has always been regarded as a water-intensive sector. The main environmental concern is therefore about the amount of water consumed and discharged and the chemical in the waste water.

Other important issues are energy consumption, emissions to air and solid wastes and odors, which can be a significant nuisance in certain treatments.

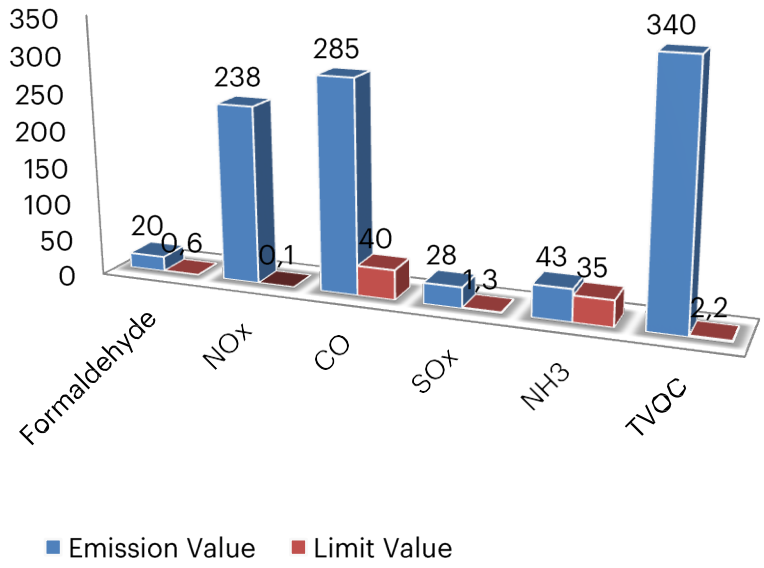
Distrubution of Textile Company in Europe

The emission and consumption levels presented in based on data collected from 105 plants across the EU (see geographical distribution in Figure) over a reference period covering the years 2016, 2017 and 2018.



Emission

The main processes linked to emissions to air of organic compounds are thermal treatment associated with wet processing, coating and laminating, printing and singeing.



Petrochemical Industry

The main air emissions from a refinery are CO_2, SO_X, NO_X, **VOC** and particulates (dust, soot and associated heavy metals)

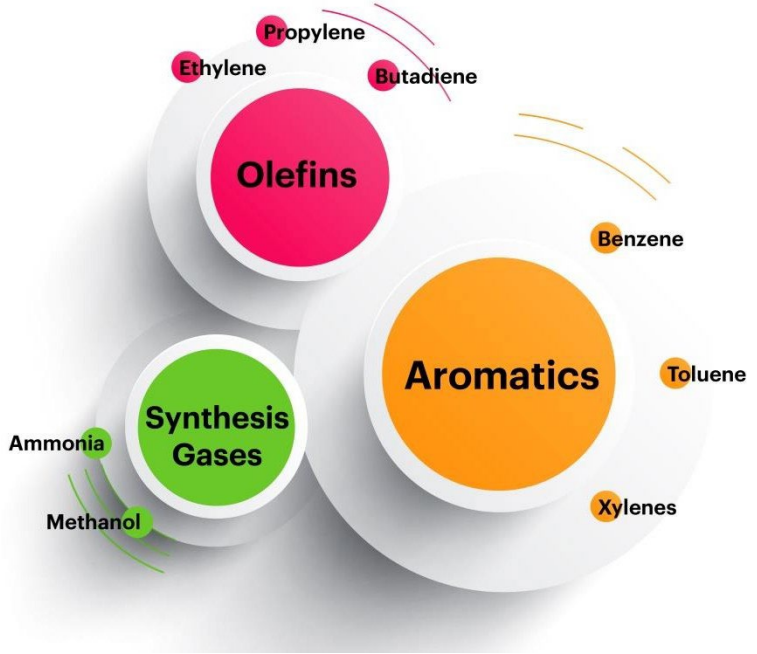
In addition H_2S, NH_3, **CO**, **benzene**, **toluene**, **dioxins**, **HF** and **HCl** also contribute to the air emissions.

The chemical and petrochemical sector accounts for approximately 30% of the total industrial final energy demand. In 2020, 61% of world electricity was generated by fossil fuels.

The chemical and petrochemical industry generates 18% of the direct industrial CO_2 emissions (excluding electricity production).

Petrochemicals Products

Petrochemicals are utilized to make a wide range of chemical compounds. In view of their complexity and the very high number of their derivatives, finished industrial products, and consumer applications, the energy demands and greenhouse gas emissions of primary petrochemicals are high. It also has the highest GHG emissions.



GHG Emissions from Petrochemical Plants

In a petrochemical plant, CO_2 emissions come from three main sources:

The Environmental Protection Agency (EPA) reports that CO_2 contributes about 98% of the GHGs, while CH_4 and NO_2 account for 2.25 % and 0.08 %, respectively.

The fuel combustion used to heat the steam cracker furnaces (by far the largest source):

Other energy (electricity) generation

Feedstock or process gas losses from cracker operations

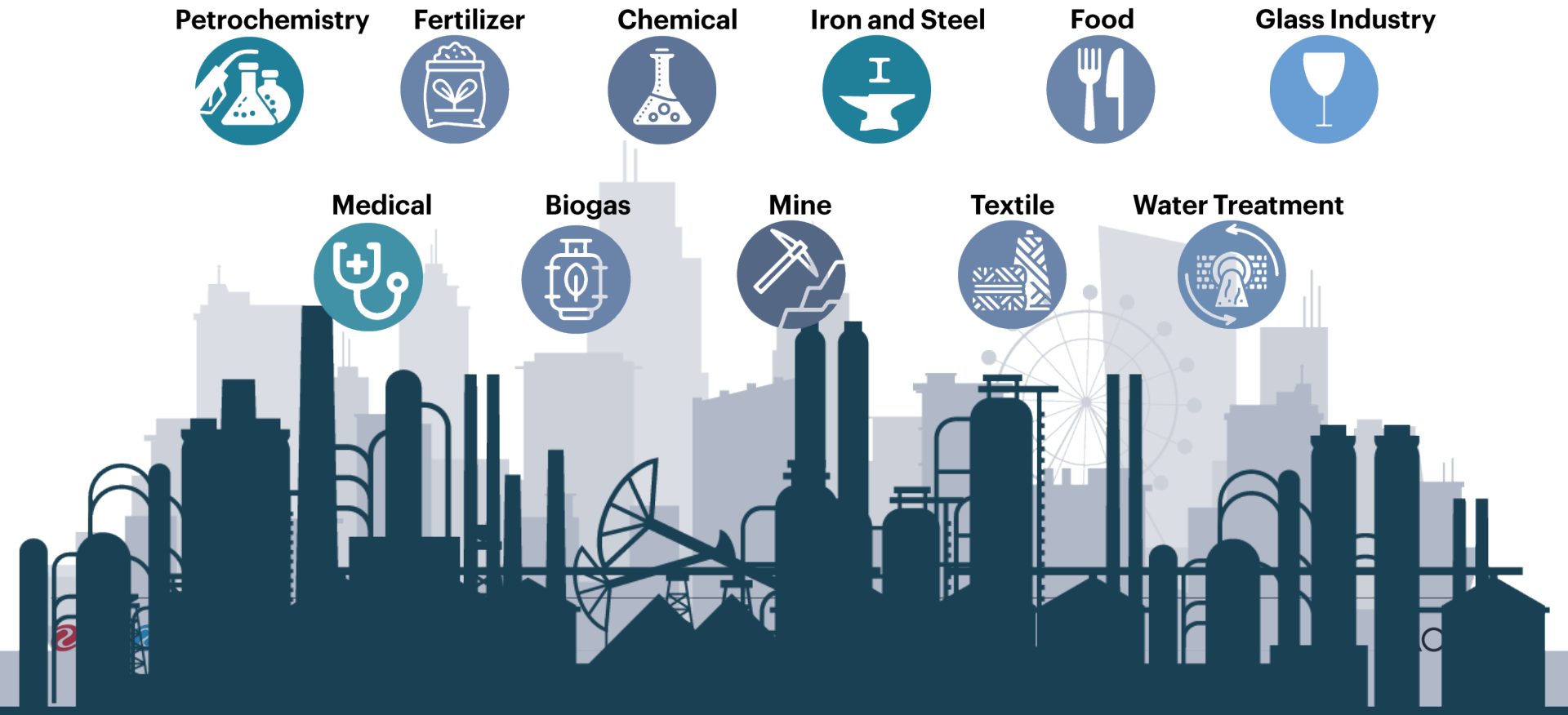
Iron and Steel Production

BAT for Emission Control

Minimisation of gas emissions by for example;

- Waste gas recirculation
- Wet scrubbing
- Regenerative Scrubbing
- Waste gas denitrification
- Regenerative activated carbon process (ex: VOC,SO_x,No_x)
- Vapour Recovery Unit (ex: VOC)
- Sulfur Recovery Unit (H_2S and SO_x)
- Tail Gas Treatment Unit (ex: H_2S and SO_x)

Sectors


Petrochemistry
Fertilizer
Chemical
Iron and Steel
Food
Glass Industry
Medical
Biogas
Mine
Textile
Water Treatment

Thank You!

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