

Industrial Air Purification

# LESNI - THE AIR PURIFICATION PEOPLE



The Promise of Clean Air

# We solve your exhaust air problems as effectively and economically as possible

LESNI A/S specialises in providing standard technology packages and innovative solutions for waste air purification. Our target is to remove and deplete irritating odour emissions, toxic gases, solvents, dust and aggressive gases.

For the past 30 years, we have designed, supplied and installed more than 1,000 air purification plants throughout Europe, America, Asia and Australia. These hightech installations cover a wide spectrum of air volumes ranging from 50 m<sup>3</sup>/h to 400,000 m<sup>3</sup>/h.

LESNI tailor made systems are designed and engineered with customer specification in mind, to meet local and international legislations and standards with great emphasis to safety, reliability and energy conservation.

## Business Areas

- Drug production
- Pharmaceutical production
- Sterilization plants
- Printing machines
- Lamination presses
- Solvent handling
- Food production
- Feedstuff production
- Waste incineration plants
- Surface treatment plants
- Fibre glass production
- Plasticisers
- Metallurgical industry
- Smokehouses
- Tank installations
- Drying of waste
- WEEE and fridge recycling

## Pollutants

- Solvents
- Odour substances
- Dust particles
- Aerosols
- Chlorinated hydrocarbons
- Organic hydrocarbons
- Inorganic substances
- Inflammable and toxic gases
- Other environment straining exhausts
- Ozone depleting substances
- Ethylene oxide
- Freons

## Technologies

- Absorption
  - Physical scrubber
  - Chemical scrubber
  - Balancer
  - Venturi scrubber
- Adsorption
  - Activated carbon
  - Zeolite
  - Solvent recovery
- Filtration
  - Dust filter
  - Droplet and mist eliminator
  - Electrostatic precipitator
- Oxidation
  - Thermal
  - Regenerative
  - Catalytic
  - DeNO<sub>x</sub>-SCR system



## Experience

Our people have a long history of delivering abatement and air purification solutions covering main technologies for a number of industries and production processes.

## Know-how

We have an extensive and profound knowledge of the market, and various technologies.

This know-how enables us to evaluate with certainty their actual efficiency and suitability in solving the various problems.

## Routine

We always work determinedly towards a complete clarification of all conditions in an air purification problem.

In close cooperation with the client, we then design the installation representing exactly the optimum solution to the requirements specified; as economically as possible.

## Partnership

LESNI aims to be your partner throughout the lifetime of your system. We engage with our customers to develop the solution, provide design and engineering, troubleshooting and after sales service to ensure the optimization and satisfactory operation of your purification plant

## Air purification by physical and chemical scrubbers

LESNI designs and supplies a range of wet scrubbers for waste gas treatment, process gas release, vacuum processes, and general waste air vent extraction applications.

The wet scrubber packages are constructed in a variety of material to suit application and mix of pollutants and process conditions. All gas scrubbers are generally fully automated to control pH dosing, level and waste handling, with high performance efficiency to meet current legislations.

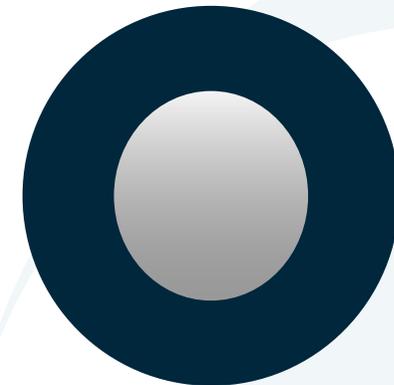
## Selective activated carbon for solvent and VOC purification

LESNI offers complete purification systems for solvent recovery on activated carbon, VOC removal and odour control. Solutions are generally designed around requirement and total capital as well as operating costs.

Various activated carbon and zeolite grades are offered; these are purposely developed and marketed by LESNI for carbon drums, single pass VOC adsorber and large containers for treating high concentrations and low level emissions and odours. Also fully automated singular and multiple adsorbers for the recovery of solvents and purification of VOC are available.



ABSORPTION



ADSORPTION

## Air purification systems for removing mist, dust and particulate matter

LESNI delivers tailormade dust filters for removing soot, tar, smoke, fine dust particles, droplets and particulates as part of total air purification solution.

The dust filters are typically placed in the air duct system upstream of the waste air treatment plant, designed according to the needs and requirement of your process.



FILTRATION

## Safe and efficient catalytic and thermal oxidisers for VOC purification and solvent destruction

LESNI has extensive experience in the design and supply of air and liquid thermal oxidisers which safely and effectively destroy waste air laden with solvents from a diverse range of industries. We design and supply turnkey packages including catalytic oxidisers, regenerative oxidisers with two, three or five canister oxidisers, as well as waste to energy incinerators.

The thermal oxidisers use the principle of thermal combustion to convert airborne Volatile Organic Compounds (VOC) and general solvents into carbon dioxide and water vapour. The purification efficiency is designed to exceed 99+%, with very little consumption of energy, due to the high thermal efficiency and heat recovery of the system.



THERMAL OXIDATION



## LESNI - The Air Purification People

### Front End Design

- Measuring emission
- Pilot plants
- Reporting
- Pre-engineering
- Design / process layout

### Engineering

- Design
- Project management
- Construction
- Sourcing
- Quality management
- Installation and commissioning

### Maintenance and Service

- Diagnostics
- Troubleshooting
- Repairs
- Preventive maintenance
- Upgrades
- Optimization (energy, lifetime)
- Spare parts
- Reporting
- Activated carbon and catalyst replacement and regeneration
- Activated carbon and catalyst disposal
- Monitoring
- 24 / 7 / 365

LESNI has developed a variety of innovative solutions for specific pollutants and processes in operation worldwide

In the most stringent environmental conditions LESNI has excelled in solving problems for all kinds of industrial and production processes, whilst meeting very demanding legislations.

In fact, any processing or manufacturing industry is a potential user of LESNI air purification solutions with the pharmaceutical, medical devices, semiconductor, chemical, food, printing and coating, waste and recycling being our core customer groups.

**Turn key solutions**

- EtO Abatement Plant
- Solvent recovery Plant
- CFC Abatement Plant
- Odour removal from coffee roasting
- H<sub>2</sub>S removal from biogas
- Drying of waste
- Treatment of chlorinated solvents
- Preconditioning Cell
- Degassing Cell



SOLUTIONS

# Absorption



## Pharmaceutical Industry



### Removal of acids and solvents

ATEX rated multipurpose chemical scrubber in special material for the purification of concentrated acids and solvents.

Airflow capacity: 500 Nm<sup>3</sup>/h

## Fridge Recycling



### Purification of CFC and HCFC

Quench and wet chemical gas scrubber for the purification of exhaust air from hydrochloric acid (HCl) and hydrofluoric acid (HF) at high temperature.

Airflow capacity: 10,000 Nm<sup>3</sup>/h

## Speciality Gases



### Absorption of ammonia and sulphur dioxide

Installation of two wet chemical scrubbers for the absorption of ammonia (NH<sub>3</sub>) and sulphur dioxide (SO<sub>2</sub>) for treating gases during filling and disposal of cylinders.

Airflow capacity: 5,600 Nm<sup>3</sup>/h

# Adsorption



Metallurgical Industry



## Adsorption of mercury and dioxins

Activated Carbon Adsorption Plant for the purification of dioxins and mercury in a heavy metal recovery process.

Airflow capacity: 215,000 Nm<sup>3</sup>/h

Biogas Production



## Removal of sulphur and odour

Adsorption of hydrogen sulphide (H<sub>2</sub>S) from a biogas production plant to remove odour and sulphur.

Airflow capacity: 2,500 Nm<sup>3</sup>/h

Production of Fine Chemicals



## Solvent recovery

Activated Carbon Adsorption Recovery Plant for the purification of exhaust air and recovery of high value solvents.

Airflow capacity: 10,000 Nm<sup>3</sup>/h

# Thermal Oxidation



Rendering Industry



Odour elimination

Installation of a Regenerative Thermal Oxidiser (RTO) with balancer for treating of odour from animal meat rendering.

Airflow capacity: 60,000 Nm<sup>3</sup>/h

Plastic Printing Industry



VOC destruction

Installation of a 3-chamber Regenerative Thermal Oxidiser (RTO) for the purification of solvents.

Airflow capacity: 40,000 Nm<sup>3</sup>/h

Food Industry



Odour and VOC destruction

Catalytic Abator Unit for the purification of exhaust air from a meat smoking plant.

Airflow capacity: 2,000 Nm<sup>3</sup>/h

# Solutions



## Waste Water Treatment



Toxic and odour elimination

Gas scrubbers and Thermal Oxidiser installed in a process from drying of waste sludge.

Airflow capacity: 8,000 Nm<sup>3</sup>/h

## Sterilization of Medical Devices



Elimination of ethylene oxide

Catalytic Abatement Plant for the purification of ethylene oxide (C<sub>2</sub>H<sub>4</sub>O) from various sources of sterilization process.

Airflow capacity: 36,000 Nm<sup>3</sup>/h

## Fridge Recycling



Purification of CFC, HCFC and pentane

Catalytic Abator, as part of a complete solution for the destruction of ozone depleting substances (ODS) used as refrigerants in cooling compressors and in foam as blowing agents from fridge recycling process.

Airflow capacity: 10,000 Nm<sup>3</sup>/h



Air purification by physical and chemical scrubbers



Activated carbon plants for VOC purification, odour removal and solvent recovery



Air purification systems for removing mist, dust and particulate matter



Safe and efficient catalytic and thermal oxidisers for VOC purification and solvent destruction



LESNI has developed a variety of innovative solutions for specific pollutants and processes in operation worldwide

  
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