



Accredited analyses of wastewater, groundwater of surface water, soil, waste and samples emissions and work environment measurements.

Measurement of inorganic and organic pollutants.

Supply of absorption systems for the disposal of acid vapours and gases.

Supply of technologies for the disposal of volatile organic compounds.

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**SOLUTION CATALOGUE**  
ELVAC EKOTECHNIKA

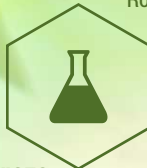
**ECOTECHNICS**



**EMISSIONS AND IMMISIONS**  
Měření emisí a imisí



**ANALYSES OF WASTE, WATER AND OTHER MATRICES**  
Rozbory odpadů vod a jiných matic



**LABORATORY SERVICES**  
Laboratorní služby



**CONSULTATION AND ADVISORY ACTIVITIES**  
Konzultační a poradenská činnost

**VOC ABATEMENT (OXIDATION) SYSTEMS**  
Likvidace (oxidace) EMISÍ VOC



**RESEARCH & DEVELOPMENT**  
Výzkum a vývoj





**EKOTECHNIKA**

## **BASIC INFORMATION**

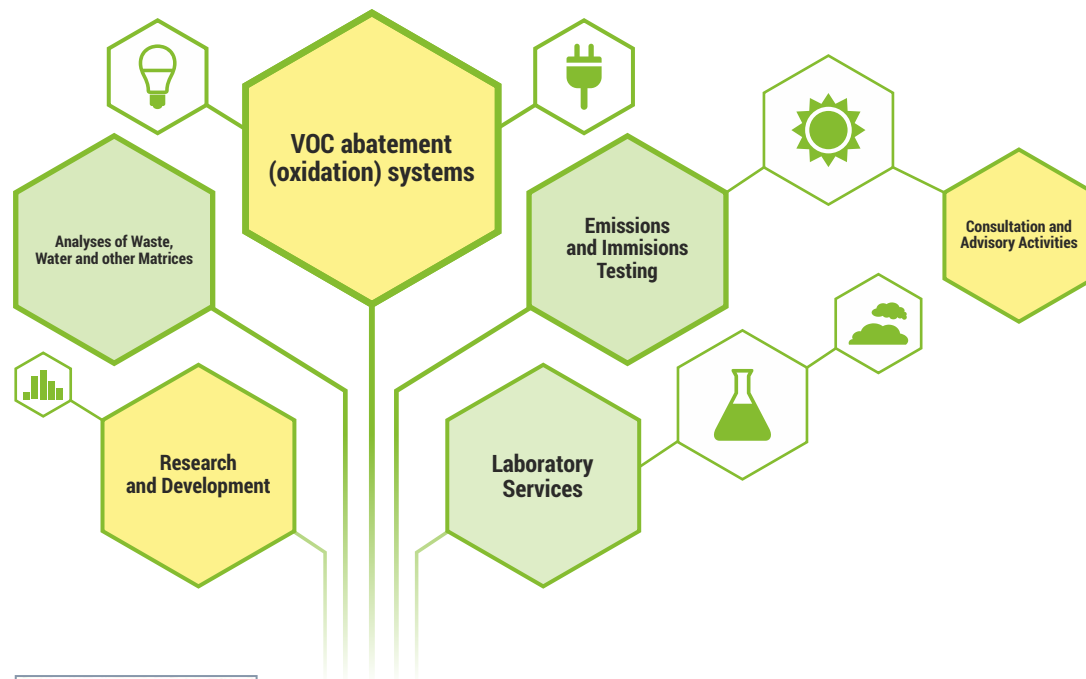
**ELVAC EKOTECHNIKA s.r.o.** offers and provides a wide range of services and supplies of environmental protection units:

- thermal, catalytic and adsorption systems for the reduction of volatile organic emissions
- absorption technologies for emission reduction reduction of inorganic vapours and gases
- authorised measurement of emissions, immissions and working environment
- accredited analysis of waste and wastewater
- and other matrices

**ELVAC EKOTECHNIKA s.r.o.**, in cooperation with universities and other research institutes, has long been building a team of experts to solve even the most complex environmental problems.

Our financial independence and stability allows us to invest regularly in technical equipment, information technology and to continuously improve our quality assurance system and increase the qualification of our employees.





**CERTIFICATE OF ACCREDITATION**  
**ČSN EN ISO/IEC 17025:2018**

Chemical and physical analysis of surface, technological, wastewater and groundwater, water leachates, waste, soils, sludges, sediments, oils, gases, emissions and working environment samples and sampling of water and waste.



## MEASUREMENT OF EMISSIONS AND IMMISSIONS

Authorised emission and immission measurement site for all groups of industrial sources.

- Authorised emission and immission measurement
- measurement of the sorption capacity of absorbers
- measurement of the working environment
- technological measurements
- consulting activities



## RESOURCES

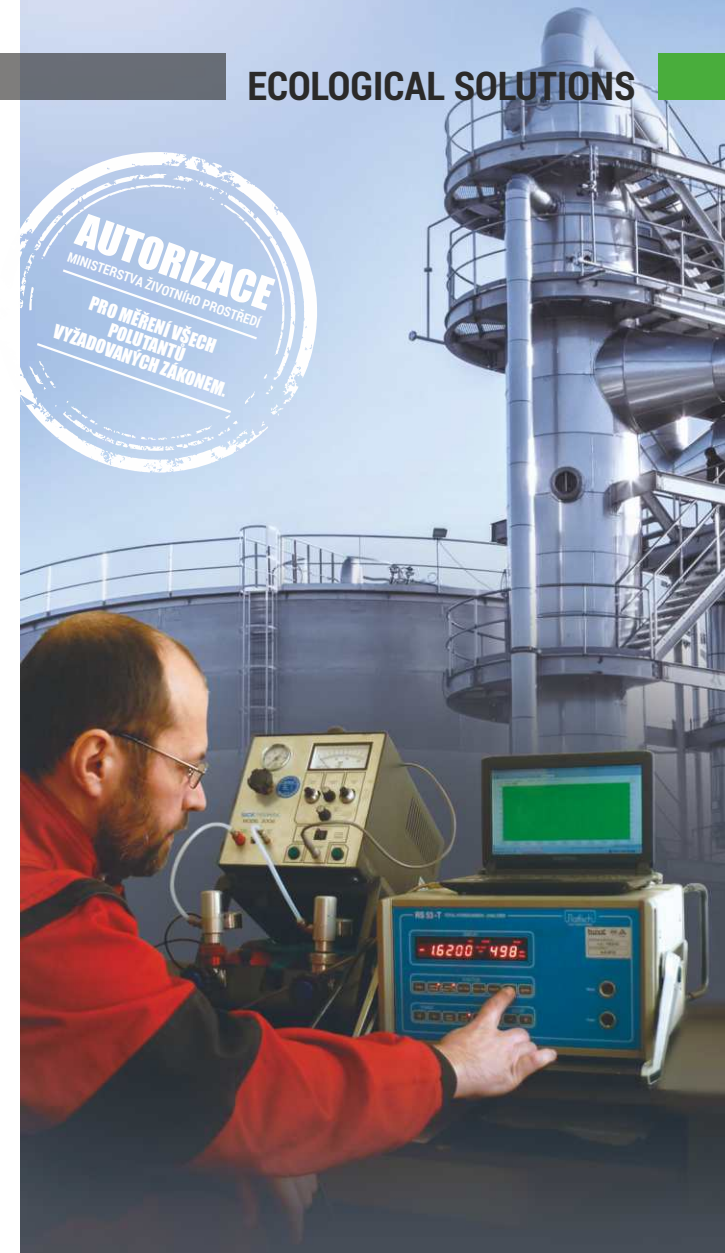
- Mobile air-conditioned measuring vehicle



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## METHODS FOR THE DETERMINATION OF POLLUTANTS

- solid polluting substances - gravimetric determination
- sulphur dioxide - spectrometric determination
- carbon monoxide - spectrometric determination and electrochemical cell
- oxides of nitrogen - spectrometric determination, chemiluminescence and electrochemical cell
- organic substances expressed as total organic carbon (TOC) - flame ionisation method
- chlorine and its gaseous inorganic compounds - determination by volumetric, photometric and ionic methods chromatography
- fluorine and its gaseous inorganic compounds - determination by photometric and ion chromatography
- hydrogen cyanide, cyanides - photometric determination
- hydrogen sulphide - photometric determination
- ammonia - photometric determination
- organic gases and vapours - determination by gas chromatography
- persistent organic pollutants (PCDD, PCDF, PCB, PAHs) - determination by HRGC-HRMS, GC/MS, HPLC/FLD
- metals - determination by AAS, ICP
- strong inorganic acids (except HCl) expressed as H<sup>+</sup> - determination by titration, spectrometry
- sulphuric acid - ionic determination chromatography
- nitrous oxide - spectrometric determination

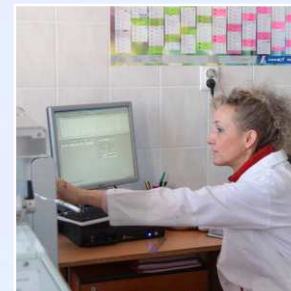
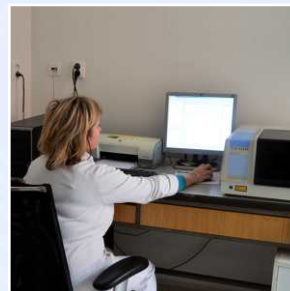




### PHYSICAL AND CHEMICAL LABORATORY

Accredited physical and chemical laboratory for analyses of water, waste and other matrices.

- analysis of wastewater from sewage treatment plants, oil separators, car washes, grease traps, etc.
- groundwater analyses; monitoring wells
- waste analysis (soils, sludges, solvents, oils)
- analysis of bio-waste (composts, digestates)
- analyses for the assessment of hazardous properties of waste
- analyses of concentrates from emissions, immissions and working environment
- special analyses according to specific requirements
- expert consultancy.



## SUPPLY OF TECHNOLOGY FOR AIR PROTECTION

Technologies for cleaning the air of organic pollutants where they are found  
(an arrow indicating increasing concentrations of organic pollutants  
and on it we place units)

- 30 - 500 mg/m<sup>3</sup> rotary zeolite concentrator unit with subsequent recuperative thermal oxidation for large volumes
- 300 - 3000 mg/m<sup>3</sup> RCO (regenerative catalytic combustion) unit, SWINGTHERM system
- 2000 - 5000 mg/m<sup>3</sup> regenerative thermal combustion unit for oxidation of organic substances
- 2500 - 6000 mg/m<sup>3</sup> regenerative catalytic combustion unit (flow reactor with flue gas heat exchanger)
- 3000 - 10000 mg/m<sup>3</sup> regenerative thermal combustion unit (flow reactor with flue gas heat exchanger)

### AREAS OF APPLICATION:

Chemical, pharmaceutical, automotive, printing or petroleum industries,  
Surface treatment of materials and products.







## SUPPLY OF TECHNOLOGY FOR THE PURIFICATION OF WASTE GASES

### ABSORPTION

Solvent absorption (washing)  
Absorption associated  
with chemical reaction  
(chemisorption)

### EXAMPLES OF WASTEWATER TREATMENT APPLICATIONS GAS ABSORPTIONS

- from pickling of sheet metal in hydrochloric acid
- etching of silicon plates in hydrofluoric and nitric acid
- etching precious metals in royal iodine

### ADSORPTION

Waste air purification  
in stationary adsorbers

### EXAMPLES OF WASTE AIR ADSORPTION TREATMENT APPLICATIONS

- fumes of chlorinated hydrocarbons from degreasing baths
- solvent vapours from food processing, chemical or pharmaceutical production

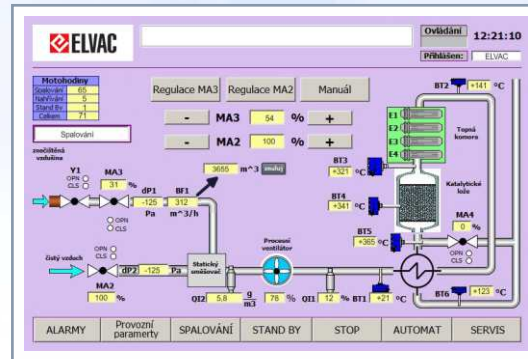


## MOBILE UNIT FOR RECUPERATIVE CATALYTIC OXIDATION

To address short-term volatile organic compound (VOC) emissions, the company ELVAC EKOTECHNIKA developed and built a mobile regenerative catalytic oxidation unit.

### Function description

- Based on recuperative catalytic oxidation
- Combustion of even explosive concentrations
- Input dilution ratio up to 1 : 100
- Process control by FID analyser
- 3 independent safety circuits:
  - LEL detector (lower explosive limit)
  - Continuous TOC analyser
  - thermal process control

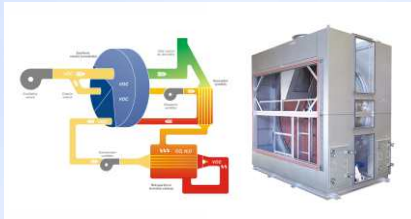


### Using the unit and its advantages

- High mobility, set-up and activation within 2 days
- Use in a range of days, weeks, (max. month)
- Independence from power source (uses own power supply)
- Low operating costs due to autothermal operation
- Ability to clean higher gas volumes, than conventional technologies of this type



## SELECTED REALISATIONS



- REGENERATIVE CATALYTIC OXIDATION
- REGENERATIVE THERMAL OXIDATION
- RECUPERATIVE THERMAL OXIDATION
- RECUPERATIVE CATALYTIC OXIDATION
- ZEOLITE ROTARY CONCENTRATOR





ELVAC a.s. ELVAC SK s.r.o. ELVAC USA LLC ELVAC EKOTECHNIKA s.r.o.

ELVAC is a group of Czech-based companies that provide commercial-technical and engineering-supplier services in industrial automation, industrial and special PC systems, power electronics and single-purpose machines. The Company is also active in the field of ecology and software development.

Today, ELVAC operates in the Czech Republic, with headquarters in Ostrava and a regional centre in Prague, in Slovakia with a head office in Trenčín, in the United States with a head office in Rome (GA), and in Bulgaria with a head office in Sofia.







 **ELVAC**

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