



## **- INCREASING WASTE VOLUMES - REQUIRE ENVIRONMENT- FRIENDLY SOLUTIONS**

The volume of most types of waste will continue to grow sharply over the coming years. Waste treatment – in compliance with environmental legislation – is playing an increasing role.

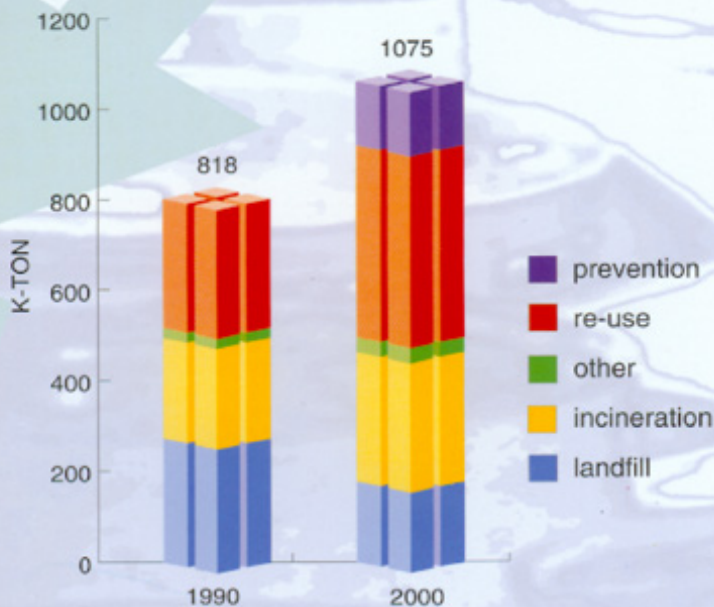
Treatment methods of high quality must both be effective and efficient while environmental risks are kept to a minimum. The disposal chain should be free from unnecessary links and an environmental care system must promote effective disposal.

Prevention, re-use of products and materials as well as disposal with energy recovery are options that should be preferred to landfilling or discharging into water courses. Edelchemie has developed reliable treatment options for dealing with Highly Problematic Wastes that meet government standards and offer an equitable balance between environmental and economic results. Now and in the future !



**Ir. L. Nevels**

# NATURAL WASTE DISPOSAL



The volume of problematic waste generated is set to rise further in the future.

## ADVANCED ENVIRONMENTAL TECHNOLOGY

"Sustainable recycling is breaking down and converting waste, using Nature's own principles". This has been the vision of Edelchemie's founder and Managing Director Leo Nevels for the past 25 years. Always ahead of its time, but that is typical of Edelchemie.

Edelchemie has used engineering to successfully convert "natural" processes into a system for the treatment of Highly Problematic Waste materials. Various technologies developed in-house have been combined in the *ZERO-option* concept, offering an innovative new solution for waste recovery and disposal. An environmentally-friendly treatment process with many internal recycle loops. Waste materials are used to process other waste in the "waste to waste" principle and raw materials are recovered for re-use while meeting strict emission limits.

This quest to develop advanced and innovative environmental technology has resulted in a large number of worldwide patents for Edelchemie.

Edelchemie uses innovative technology to dispose of problematic waste and has been doing so for 25 years! Environmental legislation is becoming ever-stricter and Edelchemie has met the challenge with the *ZERO-option* concept, demonstrating that waste can be disposed of in an environmentally and economically sound manner. Edelchemie, the environmental trendsetter.





## RELIABLE QUALITY

Edelchemie operates its own dedicated collection service and highly trained staff test and assay all waste materials in the site laboratory. On-site storage facilities and a comprehensive array of available treatment options complete Edelchemie's approach for providing solutions to your waste problems: Total Control!

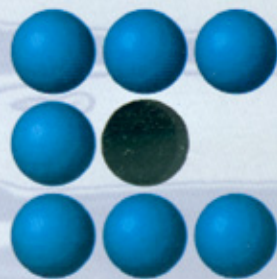
Total Control and the extensive use of the "waste to waste" principle in all treatment options ensure that Edelchemie's pricing policy remains stable, offering customers long-term reliability for their waste disposal.

Taking our responsibilities very seriously has led us to develop and implement Environmental and Quality Control Policies which have been accredited and certificated.

In future too, Edelchemie will continue to present innovative solutions for the environmental problem facing its many customers. Using "natural" environmental technology!



# ZERO-OPTION-CONCEPT



EDELICHEMIE

## 1. COLLECTION

Edelchemie operates a fleet of customised vehicles for the collection of waste. The dedicated collection system ensures full traceability by keeping separate the wastes from individual customers.



## 2. CONTROLS



On arrival, each waste is thoroughly tested in our laboratory to verify its nature and description. When matched positively the waste is accepted and the best treatment route determined.

## 3. CHEMICAL TREATMENT

Aqueous wastes are pretreated to separate Heavy Metals. The remaining solution will then be used, for example, in the preparation of primary scrubber liquid or is injected into the incinerators. Solvent based wastes are prepared for use as fuel at a later stage.



## 4. PYROLYSIS



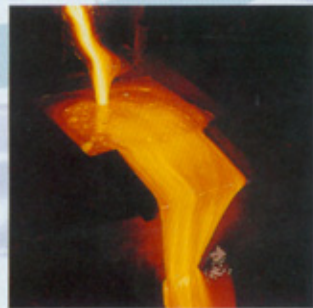
The organic fraction of waste materials is removed using the pyrolysis technique. Energy released by flammable waste is used for breaking down residues from the chemical treatment. The process produces an inorganic ash and flue gases.

## 5. GAS PURIFICATION

In a multi stage wet chemical scrubber, the flue gasses are cleaned. The cleaned gasses meet the strictest EU emission limits and residues from the scrubber are returned to Pyrolysis, so as to ultimately become part of the inorganic ash.



## 6. VITRIFICATION



Heated in a special kiln using waste fuel, the inorganic ash produces a liquid smelt. A metal alloy including silver, separates from the smelt and vitrification of the remaining fraction leaves a synthetic mineral - Obsidian.

## 7. OUTPUTS

The alloy is refined producing metals with a high degree of purity. Synthetic Obsidian is an inert product unable to release any substances and can therefore safely be applied in civil construction work.

