

The Bramsche Industrial Recycling Centre.  
For everything that is dangerous



> **Industrie Service**

**Hazardous waste**

Experts are at work in Bramsche. Using innovative processes, specialised facilities and intelligent solutions, hazardous waste is processed and recycled or disposed of here safely

[remondis-industrie-service.de](http://remondis-industrie-service.de)

# We close material life cycles. Also materials that others won't touch

Special levels of expertise are needed to manage hazardous waste. The Bramsche Industrial Recycling Centre is a specialist in this complex field. Thanks to its expertise and extensive experience, it is able to offer waste treatment methods that are unique both in Germany and in Europe.



marketable types of scrap metal sold under the brand name, RENOMETALL®.

### A wide range

The Bramsche Industrial Recycling Centre provides a great deal more than just these four key areas: more than 600 types of industrial waste can be treated here – no matter whether it is solid, pasty, liquid or gaseous. This means that the Bramsche Industrial Recycling Centre covers practically every kind of material generated by industrial businesses – both with a low or high risk potential. The plant has become a central component of the industrial recycling sector in Europe thanks to the extensive catalogue of materials it accepts, the specialist – and in some cases unique – processes it uses and its annual processing capacity of approx. 80,000 tonnes.

### Closed life cycles

Utmost priority is given to recycling. Our processing and treatment activities have, therefore, been designed in such a way that it is possible to close material life cycles. By doing so, the plant uses the very different types of material flows it accepts to produce high quality substitute fuels sold under the name RENOTHERM®.

Using our profound specialist knowledge, we advise our customers on the most suitable method of waste management – and have been doing so for over 30 years

### Four key areas

Our activities centre around four areas: our full-service system RESPRAY takes over the collection, transport and recycling of full and partially full aerosol cans. The second key area is our RENOX division. This division covers all activities covering the transport, treatment and process of special chemicals that are particularly dangerous, reactive or toxic. Last but not least, we produce the substitute fuel, RENOTHERM®, at our site in Bramsche as well as

Innovative energy creates progress: using their own technological developments, our experts pave the way to creating new processing and recycling methods





The plant treats hazardous waste from large and small businesses as well as from local authorities, scientific institutes, military facilities, private households, schools and universities

The term RENOMETALL® covers the scrap iron, aluminium and tinplate that is recovered from the treatment of contaminated metal packaging and aerosol cans.

#### **Best possible processes**

In order to process, recycle and treat the different material flows in a safe way, the site in Bramsche uses thermal, distillation and chemical-physical processes. All the facilities have been perfectly equipped: thus fully enclosed process areas made inert using nitrogen are available for particularly complex materials or waste. A network of measuring, recording and monitoring instruments ensure the processes are run in the best possible way.

#### **High safety standards**

Thanks to its universally installed safety systems, REMONDIS also fulfils the highest standards of safety at Bramsche. Air pollution control has been covered just as reliably as soil protection and water pollution control and other measures have been put in place to prevent fires and explosions. Furthermore, comprehensive internal safety measures and ongoing monitoring procedures guarantee that the treatment facilities are operated safely.

> SITE MAP



Founded in 1969/70, the Bramsche site has become one of the leading centres for industrial waste treatment in Europe thanks to its high performance facilities

> Key areas

**RESPRAY**

**RENOMETALL®**

**RENOX**

**RENOTHERM®**

- |  |  |
|--|--|
| <b>1</b> RESPRAY sorting facility            | <b>3</b> inert shredder facility                     |
| <b>2</b> RESPRAY treatment facility          | <b>4</b> RESPRAY supply area                         |
| <b>3</b> inert shredder facility             | <b>5</b> metal processing area/conditioning facility |
| <b>6</b> RENOX treatment facility            | <b>9</b> storage tanks                               |
| <b>7</b> gas storage area                    | <b>10</b> acceptance area for liquids                |
| <b>8</b> high-temperature incineration plant |  |
| <b>11</b> RENOTHERM® facility                | <b>5</b> metal processing area/conditioning facility |



### > Other facilities

12 distillation

13 CP facility

### > Support areas

14 weighing equipment/material acceptance zone

15 vehicle processing area

16 high-bay warehouse/identification of materials

17 biofilter/storage area/treatment

18 supply area

19 recycling containers

20 administration/planning

21 wash hall

22 container washing facility/area for emptying containers holding liquids

23 laboratories/staff rooms

24 workshop

25 container repair

26 water storage area





## The Bramsche Industrial Recycling Centre

The Bramsche site is the central location used within the REMONDIS Group for treatment and process of anything that is particularly dangerous. For this is the place where services are offered that are hard to find elsewhere.





## A true masterpiece

The Bramsche Industrial Recycling Centre offers services that are hard to match. It is a specialist for practically every possible situation when it comes to recycling or disposing of hazardous waste and is considered to be one of the highest-performing and most versatile plants in Germany and Europe.

And it is for these reasons that customers from the chemicals industry, solar technology and other high-tech industries as well as local authorities and other waste management companies rely on the know-how and solutions of this plant which is located in the Osnabrück region. Thanks to its cutting-edge range of facilities, REMONDIS is able to accept, safely treat and recycle solid, pasty, liquid and even gaseous material fractions.

### **Uniquely good**

The plant has a strategic edge over its competitors in its special chemicals division, RENOX, thanks to the fact that materials can be directly incinerated in its high-temperature incineration facility. The plant also plays a leading role in

many areas of aerosol can recycling: thus REMONDIS is able to recycle all kinds of aerosol cans and their contents and is the leading business in this field in Germany.

### **Cutting-edge facilities**

The divisions, RESPRAY, RENOTHERM®, RENOX and RENOMETALL®, are the four key areas of activity at the Bramsche Industrial Recycling Centre. The unique advantage here is the fact that the different processes used are grouped together at one location and together are able to handle practically every aspect of industrial waste treatment.

Aerosol cans are taken to special areas at our plant where they are first sorted before being treated








Investing in our own future: by training its apprentices to become chemical technicians and chemical laboratory technicians, REMONDIS is ensuring that its high safety standards at Bramsche in the areas of recycling and treatment as well as environmental protection are maintained in the future

#### > Facts & Figures: Industrial Recycling Centre

Employees	ca. 150
Surface area	100,000 m <sup>2</sup>
RENOTHERM®	ca. 40,000 t/a
RESPRAY	ca. 4,000 t/a
RENOX	ca. 2,000 t/a
RENOMETALL®	ca. 6,000 t/a
Total input of all material flows	over 80,000 t/a





The fuel sold under the brand name RENOTHERM® is an alternative fuel that helps to conserve natural resources and prevent climate change

# RENOTHERM® – creating new energy

Coal, gas and oil – these are still being relied on for guaranteeing progress. And yet supplies of these fuels are being depleted rapidly. It is, therefore, essential to research and develop alternative kinds of fuel. We have done precisely that and today offer a high quality brand-name fuel, RENOOTHERM®, that is produced from residual industrial waste.



A wide range of very different materials can be processed into RENOOTHERM® at the Bramsche site

REMONDIS markets liquid and solid substitute fuels under the brand name RENOOTHERM®. These are primarily used by cement works as a substitute for primary fossil fuels helping to conserve natural resources and reduce CO<sub>2</sub> emissions. One of the large-scale facilities used to produce substitute fuels from industrial waste is located at the Bramsche site. We use combustible waste with defined properties to produce these fuels. Practically 100% of all materials delivered are recycled. Over 90% of the input material leaves the plant as a fuel. The majority of the material left over at the plant is processed iron metal that is used for materials recycling.

## Multi-stage process

A multi-stage treatment process is used at the Bramsche Industrial Recycling Centre in order to ensure that the fuel produced is both homogenous and of a consistent quality. Using different processes – many of which we have

developed ourselves – we are able to process materials that are particularly challenging. Such material includes, for example, different kinds of dust that may only be processed in an enclosed system. Exacting quality management measures are carried out at each stage of the process. Such measures guarantee that quality standards remain consistent and ensure that the limit values specific to the customers' plants are strictly adhered to.

The quality features of RENOOTHERM® are precisely defined. This applies both to its calorific value and to the characteristics of the product such as grain size and chemical properties

## > Facts & Figures: RENOOTHERM®

Input	distillation residue, residual resin, paint, varnish, sealants, glues etc
Process	pre-treatment, processing, conditioning, screening, removal of foreign particles
Output	substitute fuels
Throughput	40,000 t/a





> AEROSOL CANS

## RESPRAY – we turn old cans into something new



Recycling aerosol cans is very much a job for specialists. The Bramsche Industrial Recycling Centre is considered to be the No. 1 company in Europe for this complex task. The company's pioneering full service system RESPRAY guarantees that full and partially full aerosol cans from industrial and commercial businesses are collected, transported and recycled off safely.

Aerosol cans are made of tinplate or aluminium – of materials, therefore, which are worth returning to production cycles. Before this can be done, however, the sprays' active substances and, above all, the propellants must be removed from the aerosol cans – a job for the Bramsche Industrial Recycling Centre. We process all kinds of aerosol cans at our facilities. The shape, size and amount of content left in

the cans are all irrelevant as are the contents and type of propellant used in the cans.

### Take the safe option

Full and partially full aerosol cans can be dangerous – and can even cause an explosion. For this reason special safety precautions have to be taken when handling them –

We return the aluminium and tinplate from the cans to the production cycle. The contents and propellants are recovered as far as possible or disposed of in an environmentally friendly way



### > Facts & Figures: RESPRAY

Input	all types of aerosol can
Process	separation process under inert conditions
Output	aluminium, tinplate, residual materials
Throughput	4,000 t/a



We accept full aerosol cans, even in their original packaging, as well as empty and partially full cans

especially if large quantities of cans are involved. Using combined mechanical and thermal separation processes, the aerosol cans are processed in such a way that the highly flammable materials can be captured and rendered harmless.

#### Collecting with a system

Two main features of partially full and empty aerosol cans are their light weight and their large volume. At the same time, the potential danger posed by the propellants should not be underestimated. For this reason, special requirements have been set up concerning the transport and packaging of these cans, all of which can be safely solved by using RESPRAY: the Bramsche Industrial Recycling Centre offers its customers a collection system with uniform containers that guarantees that aerosol cans are handled and transported safely. It looks at the individual requirements and then, together with its customers, decides on the types and numbers of containers that are needed as well as how often they need to be emptied.

#### Processing in the RESPRAY facility

Special safety measures have to be taken when processing the aerosol cans that have been carefully sorted according to type. For this reason, they are treated in batches using a thermal process under inert conditions and then separated into different individual fractions.

#### Returning the valuable materials

The metal contained in the aerosol cans is separated into tinplate and aluminium scrap and, if necessary, any impurities are removed. We then return the recovered metals to the production cycle under the name RENOMETALL® enabling them to be used again. This helps to conserve the natural deposits of these valuable raw materials.

 **RENOMETALL®**



We use collection and transport containers – such as the SP-800 and STB-120 – that are perfectly suitable for every requirement and fulfil all safety standards

## RENOX – special chemicals in safe hands

### **RENOX**

Some special chemicals can be particularly dangerous, reactive and/or toxic with the result that they have their own special position among the different kinds of industrial waste. REMONDIS Industrie Service's special division, RENOX, deals exclusively with these sensitive materials – winning over its customers with its full range of specialist services.



One of the main advantages of the Bramsche Industrial Recycling Centre is the fact it is able to directly incinerate materials in its high-temperature incineration plant

When it comes to the treatment of special chemicals, RENOX offers a range of services that cover three areas: transport, processing and direct incineration. All three services are provided centrally by the Bramsche Industrial Recycling Centre.

#### **RENOX transport**

We provide a reliable service transporting the chemicals from our customers' to the facility in Bramsche. A variety of containers are available for transport by road as well as special recovery containers. Furthermore, other services in this area also include jointly identifying, inspecting where necessary and classifying the materials in accordance with the hazardous waste law.

#### **RENOX treatment**

The gases in the pressurized cylinders are taken to our plant's chemical-physical treatment area where, depending on the quality and the contents, they can be neutralized via

the scrubber system or directly connected to the incineration facility. One special feature here is the centre's ability to treat or process hydrogen fluoride in pressurized cylinders. Diverse washing systems are available to free the very different kinds of containers and reactor parts of residual materials and deposits. Depending on the material group and the type of packaging, the waste is split up into lighter portions and repacked into smaller packaging so that the treatment process can be continued. A sufficient number of special safety systems are available for this work such as cubicles with inert gas and air supply systems as well as exhaust air systems.

#### **RENOX direct incineration**

During the direct incineration process, the special chemicals are transported directly into the furnace via barrel elevators and connecting systems for liquid and gaseous materials. One special feature of the Bramsche Industrial Recycling Centre is its high-temperature incineration plant: due to the unique way the muffle furnace has been constructed, materials with a longer reaction time can safely react without any problems. At the same time, this incineration unit has very different kinds of direct connections to the safety zones. The feed lines to the burner guns are so short that a blockage or fault can be ruled out or can be simply and safely dealt with and repaired. Thus, organometallic compounds with a higher amount of solid substances, for example, can be safely disposed of via this system. Furthermore, reactive and toxic chemicals or mixed materials can be incinerated at temperatures over 1,100°C via a special process using very small drums.





Special chemicals have to be handled with special care. For this reason, our specially trained employees follow the strictest of safety measures when accepting and treating these materials to protect both humans and the environment

> Facts & Figures: RENOX

Input	special chemicals from the industry, research institutes, universities, schools, small laboratories and commercial businesses as well as small volumes of hazardous waste from private households
Process	classification, transport, sorting, pre-treatment, conditioning, processing, disposal or recycling
Output	hazardous waste incineration, hazardous waste landfill, underground hazardous waste storage facility
Throughput	2,000 t/a

The RENOX services are already being provided across Europe by the company's other locations and by its cooperation partners – and the network is being continuously extended. Wherever it may be, priority is always given to ensuring that strict safety measures are in place and that the quality remains at the same high level at all times

## Ideally equipped How we master each individual challenge

The Bramsche Industrial Recycling Centre is perfectly equipped to be able to process the different kinds of hazardous waste according to their special requirements. On the one hand, this work is carried out by our wide range of facilities and, on the other hand, by our support teams.

A centre of knowledge and know-how: specialists from very different kinds of areas and business fields work in the various departments at our plant

### Conditioning – highest quality treatment

The plant has high-performance conditioning facilities in order to be able to pre-treat liquid, solid and pasty waste. Once any solids have been removed, the liquid waste is pumped into the different groups of tanks designated for such material in the tank storage area. Depending on the quality, these materials can either be used to make substitute fuel or be fed into the RENOX direct incineration system.

Solid and pasty waste undergo a multi-stage treatment process during which it is shredded, mixed, homogenised and cleaned. A shredder facility operated under inert conditions using nitrogen is on hand for treating problematic materials. Treatment is primarily carried out in enclosed systems.

Valuable materials, such as metals, are removed and then processed into recyclable scrap metals, RENOMETALL®.

### > Facts & Figures: conditioning facility

Input	liquid, pasty and solid industrial waste
Process	storage tanks, shredder facility, homogenisation and mixing technology
Output	RENOTHERM® liquid, RENOMETALL®, RENOX direct incineration, hazardous waste landfill, underground hazardous waste storage facility, hazardous waste incineration
Throughput	60,000 t/a

Splitting, neutralisation, detoxification and cleaning – these are the different treatment stages of the CP facility





The tank storage area at the Bramsche Industrial Recycling Centre: equipped for the acceptance, sedimentation and fine sedimentation of liquid waste materials

**Chemical-physical treatment –  
clean water for our environment**

The Bramsche Industrial Recycling Centre operates a chemical-physical treatment facility (CP facility) for processing watery waste. When treating watery waste with organic and inorganic contents, chemical and physical processes are used to separate the contaminants. Residue resulting from these processes is fed into the conditioning facility. At the end of this treatment process, the water is so clean that it can be fed into the sewer system.

<b>&gt; Facts &amp; Figures: CP facility</b>	
Input	watery waste with organic and inorganic content
Process	chemical/physical treatment
Output	wastewater treatment facility, conditioning, hazardous waste landfill, underground hazardous waste storage facility, hazardous waste incineration
Throughput	10,000 t/a

**Cleaning and inspecting containers –  
cleanliness comes first**

The collection containers used for hazardous waste are freed of any residue and deposits in our cleaning facility.

Being an inspection body recognised by BAM (Federal Institute for Materials Research and Testing), we also carry out the necessary inspection work and approval of IBCs – as well as other types of container. We have our own workshop for maintenance and conversion work.

**Identification and supply –  
precisely tested and safely stored**

The determining factor for all treatment processes at our plant is the individual properties of the material. For this reason, samples are taken prior to treatment by the identification monitoring team and then tested in our own plant laboratory. The Bramsche Industrial Recycling Centre has a storage area covering 5,000m<sup>2</sup> to temporarily store the materials and supply them to the various facilities. This area is divided up into a high-bay warehouse with 1,680 spaces rendered inert by nitrogen, a particularly secure gas storage area and other supply sections, some of which are under cover.

**Cleaning used air – 2,000m<sup>2</sup> of biofilter  
ensures air is kept clean**

The air in all the production areas of the Bramsche Industrial Recycling Centre is drawn off and fed through the central biofilter via a network of pipes. Each hour, up to 200,000m<sup>3</sup> of used air is biologically cleaned via dust collection and humidifying systems.

Top priority is given to prevention: the plant’s fire-fighting unit is responsible for planning fire protection measures and ensuring the fire-protection systems are always in full working order





A wide variety of vehicles for every eventuality: in many cases, special legal requirements must be adhered to when transporting hazardous waste. Our vehicles are ideally equipped for such cases

We have different kinds of vehicles available. As a result, we can select the ideal transport method for the material in question



MOBIWER vehicle



Collection vehicle for "AS"<sup>1)</sup> containers

<sup>1)</sup> AS = special container for waste collecting and transport

# Logistics solutions with a system. We leave nothing to chance

Management of hazardous waste requires the highest levels of know-how – and this also applies to the logistics. Our vehicle and container systems cover all types and volumes of materials and fully comply with all legal safety requirements. No matter whether it involves solid, pasty, liquid or gaseous waste: we have the right solution for each type of hazardous waste.

## Reliable solutions

The basis for the safe handling of such materials is using the best possible container system and having vehicles equipped to carry such containers. Our qualified and experienced employees give our customers comprehensive advice and develop sophisticated logistics solutions for them that save them time, space and money – from the punctual collection, to the safe transport with one of our special vehicles, to the final recycling/treatment plant.

## Safe transport systems

Our extensive fleet of modern specialised vehicles guarantee that the materials are transported safely to the Bramsche Industrial Recycling Centre or to other facilities

within the REMONDIS Group. All vehicles used by us have ADR approval and, besides the daily checks carried out by the drivers, are subject to additional regular external safety inspections.

## Reliable partners

In addition to our own vehicles, we also use transport systems operated by qualified partner forwarding businesses in Germany and Europe. Here, too, priority is always given to safety: the basis for such cooperation work is the business being an accredited specialised waste management company in accordance with the "EfbV" (Federal Ordinance on Specialised Waste Management Companies).

Great importance is attached to ecology in our logistics division: emphasis is put on using modern and eco-friendly vehicle technology

## > An overview of our vehicles

- AS vehicles<sup>1)</sup> for various hazardous waste containers (containers, barrels etc)
- AS articulated vehicles (open and enclosed semi-trailers for containers, barrels etc)
- Skip lorries for ASK skips up to 10m<sup>3</sup>
- Hook-lift skip vehicles for skips up to 33m<sup>3</sup>
- MSTs hook-lift vehicles for MSTs skips, platforms and tanks
- MSTs multi-lift vehicles for multi-containers and DIN skips
- Oil collection vehicles for the direct collection of oily residue waste/service fluids from garages
- MOBIWER vehicle providing a full collection service for garages
- Hazardous waste collection vehicle in acc. with TRGS 520 collecting on behalf of local authorities
- Laboratory vehicle in acc. with TRGS 520 to collect hazardous materials directly from customers'
- Vacuum/cleaning vehicle to clean tanks/separators and sewer systems

<sup>1)</sup> Vehicles for collecting and transport of AS container

**Water, raw materials and energy –  
for now and for the future**

REMONDIS Industrie Service belongs to REMONDIS AG & Co. KG, a leading international water and environmental service company. With more than 500 branches and associated companies in 29 countries in Europe, Asia and Australia, the REMONDIS Group provides professional services for more than 20 million people as well as for many thousands of companies. The highest levels of quality, worldwide. For a secure future.

**German Qualität.**

REMONDIS Industrie Service GmbH  
Industrie-Recycling-Zentrum Bramsche  
Am Kanal 9 // 49565 Bramsche // Germany  
T +49 5461 951-0 // F +49 5461 951-111  
bramsche@remondis.de  
remondis-industrie-service.de