HAZARDOUS WASTE INCINERATION PLANTS

Effective removal of harmful substances and energy recovery

A Bayer and LANXESS company
CURRENTA offers its customers, both within and outside CHEMPARK, a customized portfolio of services in core fields such as training and further education, infrastructure, safety and security, utilities, waste management, technical services and analytics.

We have our own state-of-the-art waste management facilities, an excellent disposal network and skilled personnel from the chemical and pharmaceutical industry, all of which enable us to meet the disposal requirements of our customers efficiently and cost-effectively. We treat biodegradable wastewater, deal with the incineration and landfill disposal of hazardous waste, and clean tanks. We provide advice and support in the construction and operation of waste management facilities and in the collection and recycling of valuable materials. Our portfolio covers individual services and complete solutions that meet the statutory requirements pertaining to the safe disposal of waste and wastewater that is particularly difficult to treat.

CURRENTA Environment is an expert service provider that ensures seamless production processes in Germany's largest chemical park at its three sites in Leverkusen, Dormagen and Krefeld-Uerdingen.
HAZARDOUS WASTE INCINERATOR 1  
LEVERKUSEN-BÜRRIG

Rotary kiln incinerator with afterburner chambers

Start-up
• 1967

Upgraded
• 1989

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
• 1995

Authorization status
• Recycling/disposal no.: E3932982
• Permit notification dated June 29, 2000
• Responsible authority: District authorities of Cologne

Plant operating data
• Throughput capacity: 50,000 t/a of mixed waste
• Thermal output: 32.8 MW
• Availability: 1500 h/a

Forms in which waste is accepted
• Solid waste for bunkers, loose and packed
• Packaged waste, e.g. drums, Big Bags, cardboard boxes
• Liquid waste: tank farm, direct transfer
• Containers: Schütz containers, drums, IBCs etc.

Disposal of particularly hazardous waste
• Non-miscible, reactive or hot liquids
• Highly halogenated waste
• Waste containing silicon/phosphorus
• Metal alkyls
• Insecticides, pesticides
• PCBs
• Concentrates

Structure of the plant
• High-temperature components
  - Rotary kiln incinerator with feed of waste from bunkers or drums and burners for liquid residue, afterburner chamber
  - Heat recovery/steam generation
    - Waste heat boiler with 2 radiation ducts, 2 superheaters and evaporators
    - 36 t of steam per hour is fed into the site grid as process steam at 39 bar and 320 °C
  - Flue gas cleaning
    - Quenching, rotary scrubber (acidic), rotary scrubber (alkaline), wet-wall electrostatic precipitation, selective catalytic reaction
• Auxiliary plant
  - Bunkers, drum feed system, container stations, tank farm

Your contacts

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The focus is on safe and environmentally sound waste management.

All inorganic incineration residue stays within CURRENTA Environment’s Waste Management Center.
HAZARDOUS WASTE INCINERATOR 2 LEVERKUSEN-BÜRRIG

Rotary kiln incinerator with afterburner chambers

HAZARDOUS WASTE INCINERATOR PLANTS – Hazardous waste incinerator 2 Leverkusen-Bürrig

Start-up
• 1976

Upgraded
• 1992

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
• 1995

Authorization status
• Recycling/disposal no.: E31632082
• Permit notification dated June 29, 2000
• Responsible authority: District authorities of Cologne

Plant operating data
• Throughput capacity: 30,000 t/a of mixed waste
• Thermal output: 22 MW
• Availability: 7,500 h/a

Forms in which waste is accepted
• Solid waste for bunkers, loose and packed
• Packaged waste, e.g. drums, Big Bags, cardboard boxes
• Liquid waste: tank farm, direct transfer
• Containers: Schütz containers, drums, IBCs etc.

Disposal of particularly hazardous waste
• Non-miscible, reactive or hot liquids
• Highly halogenated waste
• Waste containing silicon/phosphorus
• Metal alkyls
• Insecticides, pesticides
• PCBs
• Concentrates

Structure of the plant
• High-temperature components
  - Rotary kiln incinerator with feed of waste from bunkers or drums and burners for liquid residue, afterburner chamber
• Heat recovery/steam generation
  - Waste heat boiler with 2 radiation ducts, superheaters and evaporators

Disposal of particularly hazardous waste
• 21 t of steam per hour is fed into the site grid as process steam at 39 bar and 320 °C

Flue gas cleaning
• Quenching, rotary scrubber (acidic), rotary scrubber (alkaline), wet-wall electrostatic precipitation, selective catalytic reaction
• Auxiliary plant
  - Bunkers, drum feed system, container stations, tank farm

All inorganic incineration residue stays within CURRENTA Environment's Waste Management Center.

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SEWAGE SLUDGE INCINERATOR LEVERKUSEN-BÜRRIG

Multiple-hearth furnace with afterburner chamber

Plant operating data
- Throughput capacity: 90,000 t/a of sewage sludge (25,000 t/a dry substance), up to 70 t/d of heating oil substitute
- Thermal output: 24 MW
- Availability: 7,500 h/a

Forms in which waste is accepted
- Waste similar to sewage sludge
- Sewage sludge: via a site-specific trolley system
- Liquid residue: tank farm
- Highly chlorinated solvents (compact)
- Highly contaminated industrial sludge

Structure of the plant
- High-temperature components
  - Multiple-hearth furnace with feed of sewage sludge and afterburner chamber
- Heat recovery/steam generation
  - Waste heat boiler with 1 radiation duct, superheater and evaporator bundle
  - 23 t of steam per hour is fed into the site grid at 39 bar and 320 °C
- Flue gas cleaning
  - Quenching, rotary scrubber (acidic), jet scrubber (alkaline), entrained-flow adsorber
- Auxiliary plant
  - Sludge bunker (treatment plant), sludge transport system, tank farm

Authorization status
- Recycling/disposal no.: E31632082
- Permit notification dated June 29, 2000
- Responsible authority: District authorities of Cologne

Year of construction
- 1988

Increase in boiler output
- 1996

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
- 1996

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High qualified employees ensur for the smooth flow of waste.

All inorganic incineration residue stays within CURRENTA Environment’s Waste Management Center.
Year of construction
- 1988

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
- 1996

Authorization status
- Disposal no.: E31632082
- Permit notification dated June 29, 2000
- Responsible authority: District authorities of Cologne

Plant operating data
- Throughput capacity: 20,000 t/a of wastewater, 9,000 t/a of organic sludge
- Thermal output: 4 MW
- Availability: 7,500 h/a

Forms in which waste is accepted
- Liquid waste, wastewater: in mobile containers

Disposal of particularly hazardous waste
- Liquid waste containing salt
- Wastewater toxic to bacteria
- Insecticides, pesticides

Structure of the plant
- High-temperature components
- Incineration chamber with burners for wastewater, gas burner as a supplementary burner
- Heat recovery/steam generation
  - Special vessel as incineration chamber with downstream heat-dissipating surfaces
  - 7 t of steam per hour is fed into the site grid at 39 bar and 320 °C
- Flue gas cleaning
  - Quenching, jet scrubber (alkaline), wet-wall electrostatic precipitation (two-duct)
- Auxiliary plant
  - Wastewater concentrate tank

All inorganic incineration residue stays within CURRENTA Environment’s Waste Management Center.

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HAZARDOUS WASTE INCINERATION PLANTS – Residue incinerator Dormagen RVAD

RESIDUE INCINERATOR DORMAGEN (RVAD)

Rotary kiln incinerator with afterburner chambers

Year of construction
• 1994

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
• 1994

Authorization status
• Disposal no.: E16212061

forms in which waste is accepted
• Solid waste for bunkers, loose and packed
• Packaged waste, e.g. drums, Big Bags, cardboard boxes
• Liquid waste: tank farm, direct transfer
• Containers: Schütz containers, drums, IBCs etc.
• Gases, grid degassing from liquid gas container

Disposal of particularly hazardous waste
• Non-miscible, reactive or hot liquids
• Highly halogenated waste
• Waste containing silicon/phosphorus
• Metal alkyls
• Insecticides, pesticides
• PCBs
• Concentrates
• Wastewater

Structure of the plant
• High-temperature components
  • Rotary kiln incinerator with feed of waste from bunkers or drums and burners for liquid residue, afterburner chamber for liquid residue and wastewater
• Heat recovery/steam generation
  • Waste heat boiler with ten partitioned ducts with economizer, evaporator and superheater

Forms in which waste is accepted
• Solid waste for bunkers, loose and packed
• Packaged waste, e.g. drums, Big Bags, cardboard boxes
• Liquid waste: tank farm, direct transfer
• Containers: Schütz containers, drums, IBCs etc.
• Gases, grid degassing from liquid gas container

Disposal of particularly hazardous waste
• Non-miscible, reactive or hot liquids
• Highly halogenated waste
• Waste containing silicon/phosphorus
• Metal alkyls
• Insecticides, pesticides
• PCBs
• Concentrates
• Wastewater

Structure of the plant
• High-temperature components
  • Rotary kiln incinerator with feed of waste from bunkers or drums and burners for liquid residue, afterburner chamber for liquid residue and wastewater
• Heat recovery/steam generation
  • Waste heat boiler with ten partitioned ducts with economizer, evaporator and superheater

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• Up to 44.2 t of steam per hour is fed into the site grid at 30 bar and 300 °C
• Flue gas cleaning
  • Quenching, rotary scrubber (acidic), rotary scrubber (alkaline), condenser, wet-wall electrostatic precipitation, selective catalytic reaction DeNOx (two-duct)
• Auxiliary plant
  • Bunkers, automatic drum preparation/feed system, drum storage, tank farm and container stations, wastewater treatment

All residue stays within CURRENTA Environment’s hazardous waste landfill site in Dormagen

Plant operating data
• Throughput capacity: 75,000 t/a of mixed waste
• Thermal output: 42 MW
• Availability: 7,900 h/a

Permit notification dated June 14, 2005
File reference: 56.8851.8.1-4662
Responsible authority: District authorities of Düsseldorf
HAZARDOUS WASTE INCINERATION PLANTS – Thermal waste air incinerator Dormagen TVA

植危险废物焚烧厂

Thermal waste air incinerator Dormagen TVA

Year of construction
• 1970
  (with subsequent expansion phases)

Authorization status
• Certification in accordance with DIN EN ISO 14001/DIN EN ISO 9001
• Permit notification dated September 20, 2006
• File reference: 63/B26/2896/2006
• Responsible authority: District authorities of Cologne

Plant operating data
• Max. throughput capacity: 75,000 m³/h of waste air
• Thermal output: 18 MW
• Availability: 99.9 %

Structure of the plant
• High-temperature components
  • 2 muffle furnaces, 1 thermal reactor, 2 combustors as back-up furnaces
• Heat recovery/steam generation
  • 12 t of steam per hour is fed into the site grid at 30 bar
• Flue gas cleaning
  • Quenching, jet scrubber, induced-draft fan

The rinsing water generated by the waste air cleaning process is treated at CURRENTA Environment’s wastewater treatment plant in Dormagen.

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HAZARDOUS WASTE INCINERATION PLANTS – Residue incinerator Krefeld-Uerdingen RVA2

RESIDUE INCINERATOR
KREFELD-UERDINGEN (RVA2)

Rotary kiln incinerator with afterburner chambers

- Thermal output: 13.8 MW
- Availability: 7,500 h/a

Forms in which waste is accepted
- Solid waste for bunkers, loose and packed
- Packaged waste, e.g. drums, Big Bags, cardboard boxes
- Liquid waste: tank farm, direct transfer
- Containers: Schütz containers, drums, IBCs etc.
- Gases

Disposal of particularly hazardous waste
- Non-miscible, reactive or hot liquids
- Highly halogenated waste
- Waste containing silicon/phosphorus
- Metal alkyls
- Insecticides, pesticides
- PCBs
- Concentrates

Structure of the plant
- High-temperature components
  - Rotary kiln incinerator with feed of waste from bunkers or drums and lances for liquid residue, afterburner chamber with lances for liquid residue and wastewater
- Heat recovery/steam generation
  - Waste heat boiler with eight partitioned ducts

District authorities of Düsseldorf

All inorganic incineration residue stays within CURRENTA Environment’s Waste Management Center.

Year of construction
- 1985

Upgraded
- 1996

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
- 1996

Authorization status
- Disposal no.: E11412043
- Permit notification dated March 22, 1996
- File reference: 56.8851.8.1/3991
- Responsible authority: District authorities of Düsseldorf

Plant operating data
- Throughput capacity: 25,000 t/a of mixed waste

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- 13.5 t of steam per hour is fed into the site grid at 16 bar and 250 °C
- Flue gas cleaning
  - Quenching, rotary scrubber (acidic), rotary scrubber (alkaline), wet-wall electrostatic precipitation, DAGAVO (steam pre-heater), induced draft and selective catalytic reaction
- Auxiliary plant
  - Bunkers, drum feed system, container stations, tank farm, slag bunker, boiler ash removal, wastewater treatment, shredder, rail tank car unloading stations
HAZARDOUS WASTE INCINERATION PLANTS – Gas phase oxidation plant Brunsbüttel GPO

GAS PHASE OXIDATION PLANT BRUNSBÜTTEL (GPO)

Gas phase oxidation plant with upstream wastewater evaporation

**Year of construction**
- 1980

Flue gas cleaning in accordance with 17th BImSchV (German regulations governing emissions)
- 1992

**Authorization status**
- Disposal no.: A51D10521
- Permit notification dated April 30, 1993
- File reference: 308/406/Kn BA BY, permit no. 26/02
- Responsible authority: StUA (State Environmental Office) Itzehoe

**Plant operating data**
- Throughput capacity: 27,000 t/a of wastewater
- Thermal output: 11.5 MW
- Availability: 7,200 h/a

**Forms in which waste is accepted**
- Liquid waste, wastewater: in mobile containers

**Disposal of particularly hazardous waste**
- Liquid waste, in particular oils containing PCBs and flammable liquids with an Fp < 21 °C
- Wastewater toxic to bacteria
- Insecticides, pesticides
- Solvents as a substitute fuel

**Structure of the plant**
- High-temperature components
  - Incineration chamber with burners for wastewater and liquid waste
- Heat recovery/steam generation
  - Special vessel as incineration chamber with downstream heat-dissipating surfaces
  - 14 t of steam per hour is fed into the site grid at 34 bar and 300 °C
- Flue gas cleaning
  - Quenching and wet-wall electrostatic precipitation
- Auxiliary plant
  - Transfer station and tank farm, wastewater treatment and evaporation

All inorganic incineration residue in the form of salts is consigned to one of the controlled hazardous waste landfill sites operated by CURRENTA Environment.

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HAZARDOUS WASTE INCINERATION PLANTS – Types of incineration plants

TYPES OF INCINERATION PLANTS

Step by step: An overview of plant components and processes

Wastewater incinerator

Hazardous waste incinerator

Sewage sludge incinerator