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RAMPF Eco Solutions

Chemical and technical processing solutions
for the manufacture of alternative polyols

RAMPF

#DiscoverTheFuture



Engineering and Chemical Solutions



Machine Systems



Production Systems



Composite Solutions



Eco Solutions



Polymer Solutions



Tooling Solutions

RAMPF Eco Solutions is a company of the international **RAMPF** Group.
Find out more on page 16.

RAMPF Eco Solutions

Innovative chemical and technical processing solutions for the manufacture of alternative polyols

RAMPF Eco Solutions is an expert in chemical solutions for the manufacture of high-quality alternative polyols from PU and PET waste materials.

The core competence is the manufacture of alternative polyols from PU waste materials. The company's innovative chemical solutions are used to process waste production materials from PU manufacturers into tailored polyols. Waste materials from sister companies RAMPF Polymer Solutions and RAMPF Tooling Solutions are also recycled.

The Pirmasens-based company has also developed a chemical process that enables PET/PSA, other polyesters (PLA, PC, PHB), and renewable or bio-based raw materials such as vegetable oils to be used as sources of raw materials for the manufacture of high-quality alternative polyols.

RAMPF Eco Solutions designs and constructs customized recycling facilities for PU manufacturers that produce high volumes of waste material. This enables the companies to manufacture cost-effective, high-tech polyols at their own production site. RAMPF Eco Solutions also develops plants for the manufacture of alternative polyols from PET/PSA and biomonomers.



Discover more on
youtube.com/rampfgroup



Range of products and services

Our core competence is the
manufacture of alternative polyols
from PU and PET waste materials



MATERIALS

PETOL® Ester polyols	RECYPOL® Ether polyols and ester polyols	RECYPUR® Polyurethanes	Polyols based on renewable raw materials (NP)
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Innovative, high-performance, sustainable:

Manufacture of high-quality alternative polyols from PU waste materials, PET / PSA, other polyesters (PLA, PC, PHB), and renewable raw materials.

PRODUCTION TECHNOLOGY SYSTEMS

Plants for the manufacture of alternative polyols

Customized, high-tech, professional:

Plants for the manufacture of tailored alternative polyols from PU waste materials, PET / PSA, and renewable raw materials.

SERVICES

Polyurethane recycling services	Development of tailored alternative polyols	Manufacture of PU molded parts	Project planning for customized chemical recycling plants
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Customer-oriented, competent, committed:

With competence and experience, RAMPF Eco Solutions supports its customers in the development of customized alternative polyols and the design of chemical recycling plants. High-performance PU systems based on in-house polyols are individually formulated and used in a wide variety of applications.

Your industry | Your application

Customized and sustainable
solutions for a wide range of
applications





**AUTOMOTIVE /
MOTORSPORTS**



CONSTRUCTION



**ELECTRICAL /
ELECTRONICS**



ENERGY TECHNOLOGY



FILTERS



FOUNDRY



**HOUSEHOLD
APPLIANCES**



WOOD / FURNITURE



AEROSPACE



**MECHANICAL
ENGINEERING**



MEDICAL TECHNOLOGY



MARINE AND RAILWAY



**MISCELLANEOUS
APPLICATIONS**





+ YOUR BENEFITS

- > High quality alternative polyols (recycled polyols)
- > Former product characteristics retained in new cross-linking
- > Less expensive than primary polyols
- > Reduced disposal costs
- > Significant resource-savings
- > Environmental benefits achieved through recycling raw materials
- > No reliance on dwindling petrochemical raw materials

Basic polyols

Sustainable, cost-effective, high-quality

Recycling – an economical and ecological competitive advantage

For over 20 years, research teams at RAMPF Eco Solutions have been developing high-quality alternative polyols. In two of the largest multi-functional plants in Europe, tailored polyols are manufactured from PU waste materials or PET/PSA using solvolysis (glycolysis, acidolysis, and polyolysis).

After being recycled through either RAMPF Eco Solutions or another PU systems house, the resulting basic polyols are integrated back into the customer's production process. This creates a cycle that delivers both environmental and economic benefits.

Furthermore, by using polyols based on renewable raw materials (biopolyols) RAMPF Eco Solutions' customers no longer need to rely on dwindling petrochemical raw materials.

PETOL®

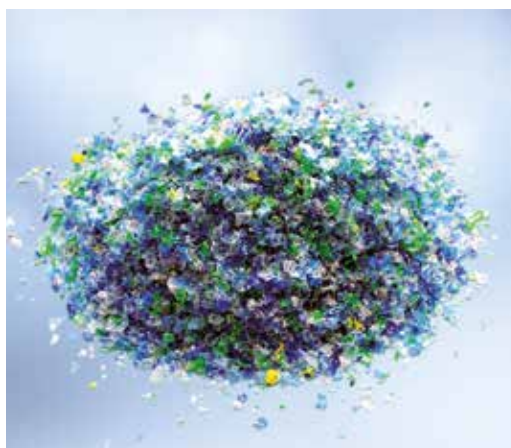
Ester polyols based on PET or PSA

RECYPOL®

Ether and ester polyols based on polyurethane materials

POLYOLS BASED ON RENEWABLE RAW MATERIALS (NP)

Manufacture through modification and functionalization of renewable raw materials (e. g. rapeseed oil)



PET FLAKES



PETOL®

+ YOUR BENEFITS

- > In-house, customized, cost-effective polyol production
- > High quality of alternative polyols
- > Lower transport and disposal costs
- > No vulnerability to variations in raw-material prices
- > Ecologically sustainable production cycle – stand out from the competition



Tailor-made plants

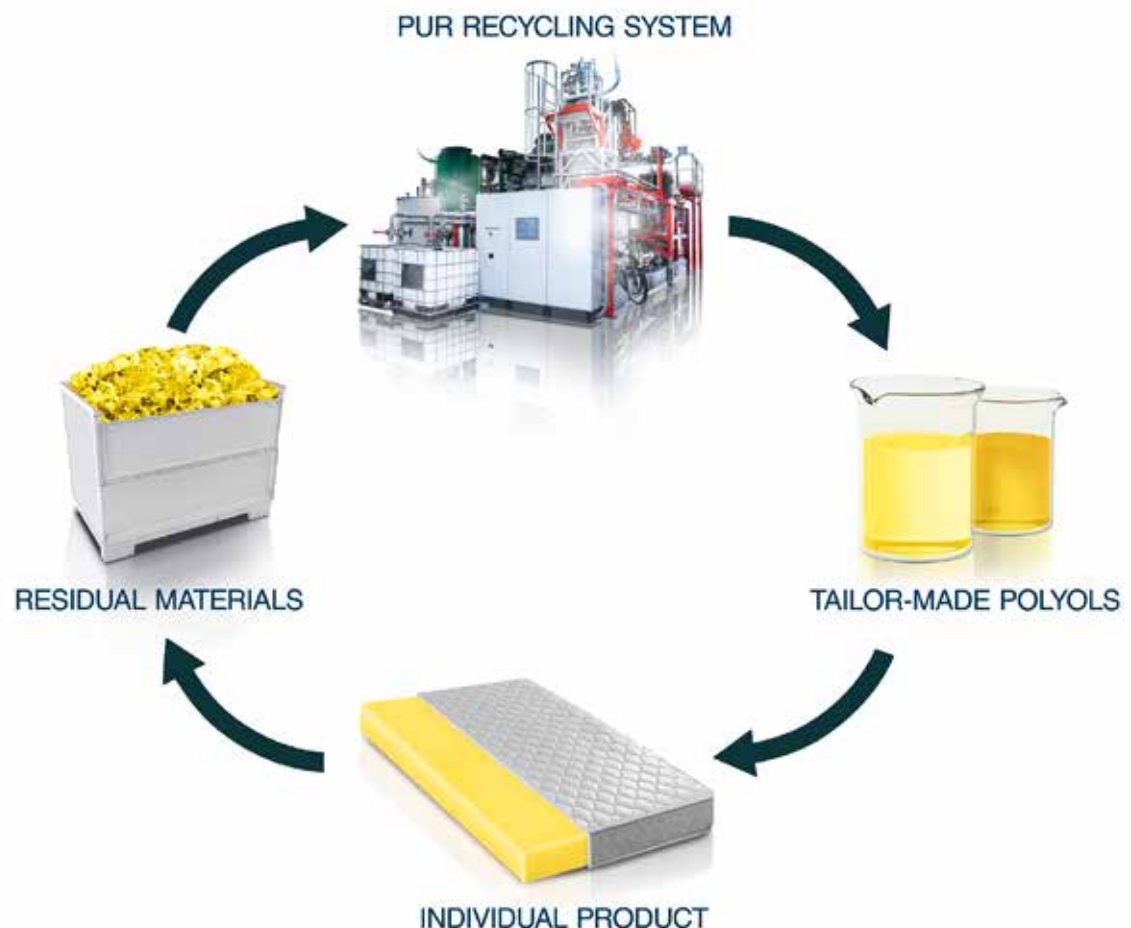
Manufacture of polyols using PU and PET/PSA

Production residues as a source of high-quality raw materials

RAMPF Eco Solutions is a leader in the design, development, and construction of plants for the manufacture of customized alternative polyols using PU waste materials, PET / PSA, polyesters such as PLA and PHB as well as biomonomers.

The plant enables customers to manufacture their own polyols onsite. These can then be fed directly back into the production process. This significantly reduces raw material, transport, and disposal costs, making the production of PU-based products more environmentally friendly.

RAMPF Eco Solutions combines many years of experience both in developing innovative chemical solutions and in industrial plant construction – the result is a unique proposition for the market. You can build your success on RAMPF's comprehensive, highly professional customer support – from development all the way through to plant commissioning.



+ YOUR BENEFITS

- > Holistic development partner and service provider
- > Customer-oriented support
- > High degree of flexibility in terms of time and location



Services

Customer-oriented, competent,
committed

Know-how and experience ensure
your long-term success

Economy and ecology in harmony – with its encompassing know-how and experience, RAMPF Eco Solutions plays a major role for a cost- and resource-efficient production.

POLYURETHANE RECYCLING SERVICES

- Holistic support throughout the development, manufacture, and sales processes for alternative polyols made from customers' waste materials

DEVELOPING TAILOR-MADE ALTERNATIVE POLYOLS

- Short development times as standard polyols can be developed from renewable raw materials using modification or functionalization
- Involvement of customers in the development of customized polyols from their own waste production materials

MANUFACTURE OF PU MOLDED PARTS

- Raw materials for the manufacture of molded parts for fitness and motorcycle accessories, office furnishings, transport containers, amongst others
- Manufacture of molded parts from semi-rigid integral skin foam and rigid foam
- Prototypes, small- to medium-scale series production, and large-scale series production (by arrangement)

PROJECT PLANNING FOR CUSTOMIZED CHEMICAL PLANTS

- Chemical know-how: Development of alternative polyols
 - Plant technology expertise: Operating in-house plants and collaboration with renowned plant manufacturers
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PU Systems

Customized and versatile

High-quality based on in-house polyols

RAMPF Eco Solutions boasts unique expertise in the formulation of PU systems based on its own polyols. Polyurethane systems based on waste and alternative raw materials are just as versatile as polyurethanes based on new polyols.

Polyols from RAMPF Eco Solutions are ideal for:



SEMI-RIGID INTEGRAL FOAMS

based on recycled polyols (RECYPOL®)
Applications: Shoe soles, armrests, back cushions, seat cushions, foam insulation for beer kegs etc.



RIGID INTEGRAL FOAMS

based on RECYPOL®
Applications: Housings, trims etc.



RIGID FOAMS

based on RECYPOL®
Applications: Insulation, decorative applications etc.



FLEXIBLE FOAMS

based on RECYPOL®
Applications: Mattresses, car seats, office furnishings

+ YOUR BENEFITS

- > High-quality alternative PU systems
- > Price savings over conventional PU systems
- > Tailored to customer's specific requirements
- > Identical or similar product characteristics
- > Versatile



We are inventors. Team players. And a strong partner.

RAMPF – a global market-leading specialist in custom chemical and engineering solutions

We are experts for reactive resins, machine systems, and lightweight composite construction solutions.

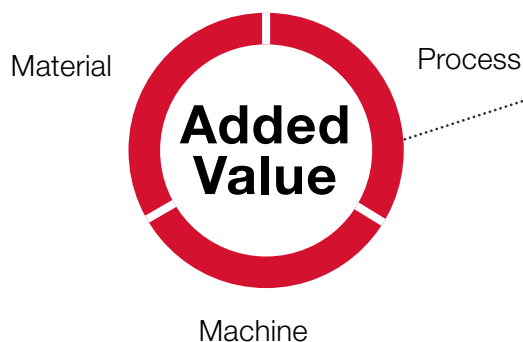
Our mission – discover the future.

In partnership with our customers, we develop tomorrow's products and tailored solutions today – for the decisive competitive edge.

Over the last 40 years, we have grown from an inventive one-man business into an international medium-sized group of companies, with operations at twelve locations on three continents.

Now run by the next generation of our family, the business still maintains the same fundamental values – being a trustworthy and reliable partner for our customers and our employees. This is the only way to build lasting, successful partnerships.

At RAMPF, innovation and tradition go hand in hand. We are one big family, focusing on the future with a sustainable, value-adding approach, and are very much aware of the social and environmental responsibilities associated with our business activities. That is why we are committed to promoting a respectful and appreciative way of dealing with one another.



RAMPF – Engineering and Chemical Solutions.
Utilize our wide-ranging innovative potential
for Added.Value.

Founded as a
One-man Business

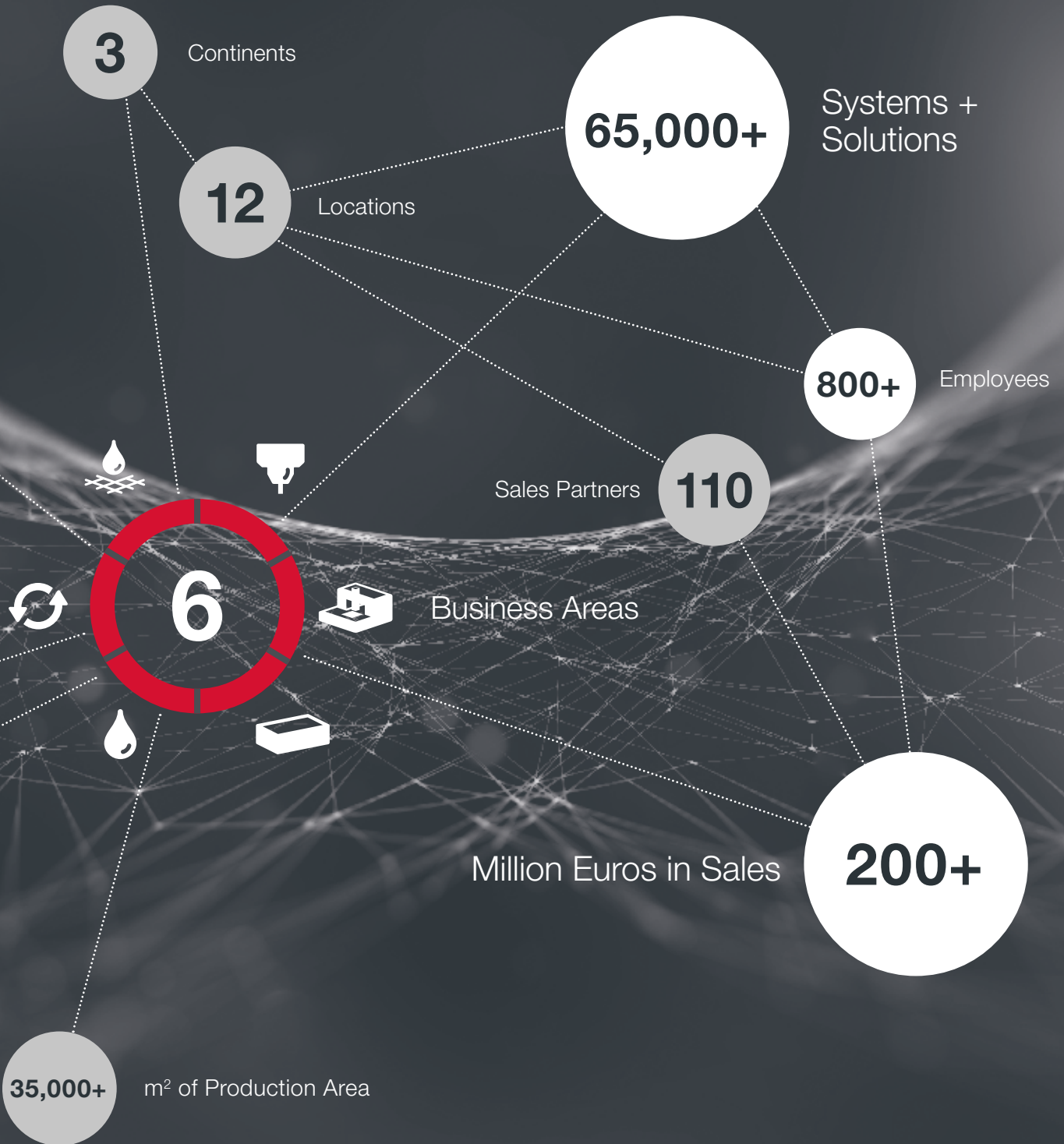
1980

Second-generation
Family Company

2

m² of Laboratories

3,000+





RAMPF –

discover the future

Developing the Solutions
of Tomorrow – Today.

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Mass production?
Not at RAMPF.

**We engineer
made-to-order solutions.**

