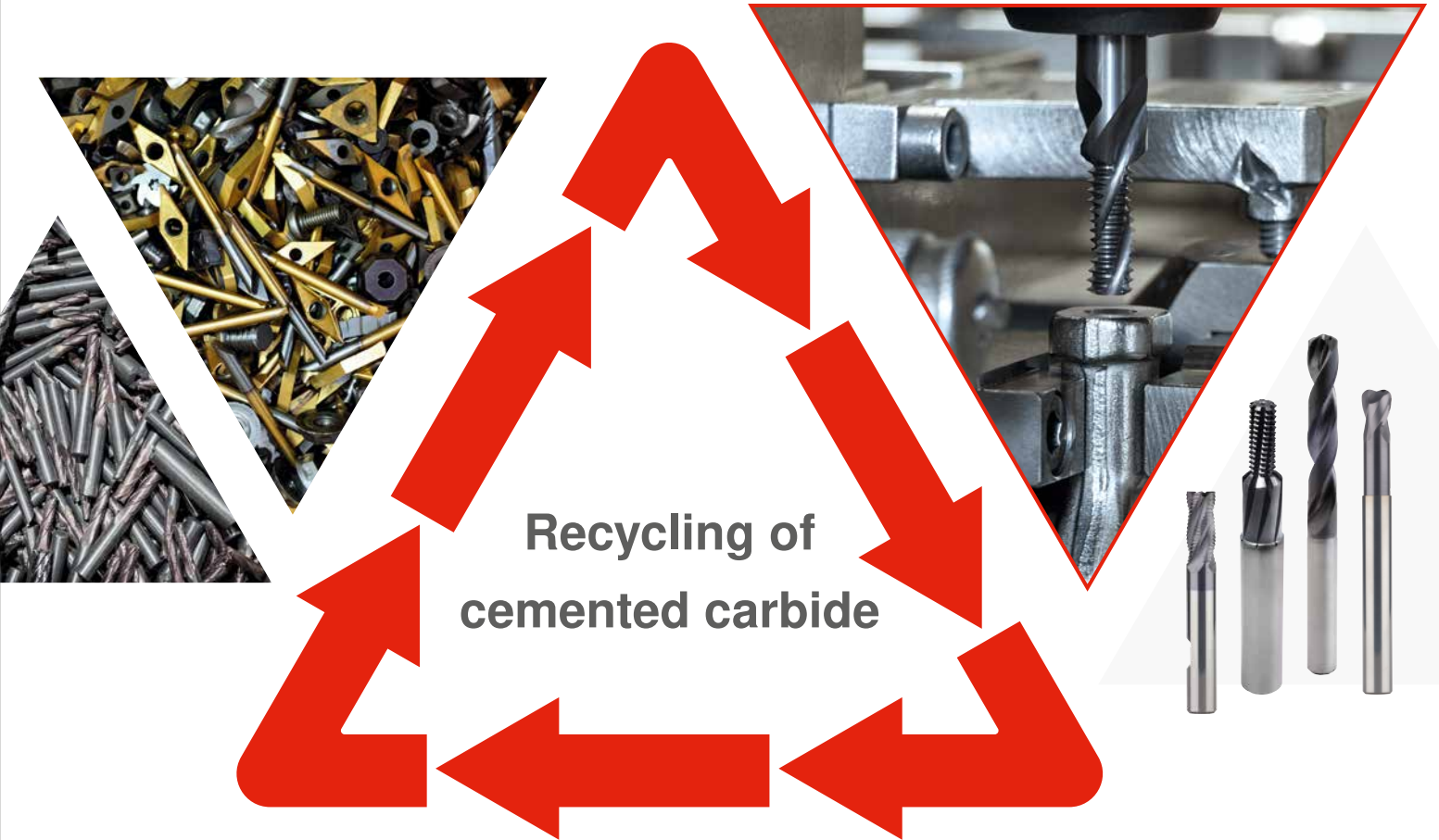


**Ecological, sustainable
and economical**



CERATIZIT is a high-tech engineering group specialised in tooling and hard material technologies.

Tooling the Future

www.ceratizit.com

Efficient recycling technologies – trendsetting throughout the world

Certified recycling methods, high-quality carbide grades

The CERATIZIT Group has developed processing methods, certified to ISO 9001 and ISO 14001 standard, to convert carbide products after use to recyclable powder. The goal is to recycle the used carbide completely while keeping energy consumption to a minimum. There are two different methods for reducing the carbide end-product to the basic material for recycling:

The thermal zinc process – with high tungsten carbide content and very low use of chemicals

This process involves thermal treatment of cemented carbide with zinc, resulting in a powder which contains over 99% of the tungsten carbide in its original form, along with metallic cobalt and other additives such as grain growth inhibitors.

The chemical process – with low tungsten carbide content and very low energy use

The chemical recycling process is suited to all types of carbide, including grinding slurries and batches with low carbide content. The metallic components are dissolved and converted to oxides, from which pure tungsten metal and carbide powder can then be obtained. Cobalt results as a separate by-product from the process. In both processes, we work closely with our partner Global Tungsten & Powders (GTP) in the USA.



Protection of resources and environmental responsibility

Collection and processing of secondary raw materials

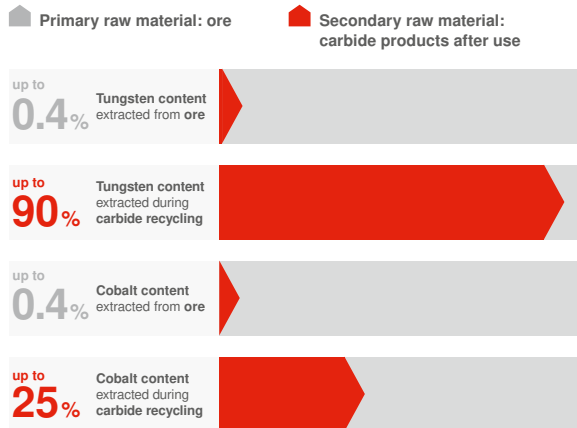
For the CERATIZIT Group, recycling means the responsible handling of resources.

We pursue a deliberate policy of conserving limited primary resources through metal recycling, by notably increasing the ratio of reused materials. By recycling secondary materials, CERATIZIT also limits the consequences of intensive mining, like the pollution of air, water and soil, and helps check the excessive use of energy.

Used cemented carbide – a uniquely valuable source of materials

In cemented carbide, tungsten carbide particles are embedded in a cobalt matrix. Depending on the degree of hardness of the carbide, the tungsten ratio may be between 65 and 90%, that of cobalt as much as 25%.

Primary raw material vs. secondary raw material



Tungsten



Cobalt



Carbide powder

CERATIZIT Group facts & figures



1 headquarters
Mamer, Luxembourg



33
production sites



> 50
sales subsidiaries

Social and ecological responsibility

Minimising energy consumption

Minimising dependence

One goal of the CERATIZIT Group's supply purchasing policy is to reduce dependence on single regions and suppliers. We also try to procure our raw materials from conflict-free and sustainable sources. More than 80% of tungsten primary production comes from the People's Republic of China, and over 60% of cobalt is extracted in the Democratic Republic of Congo.

Conflict-free certificate for raw material procurement

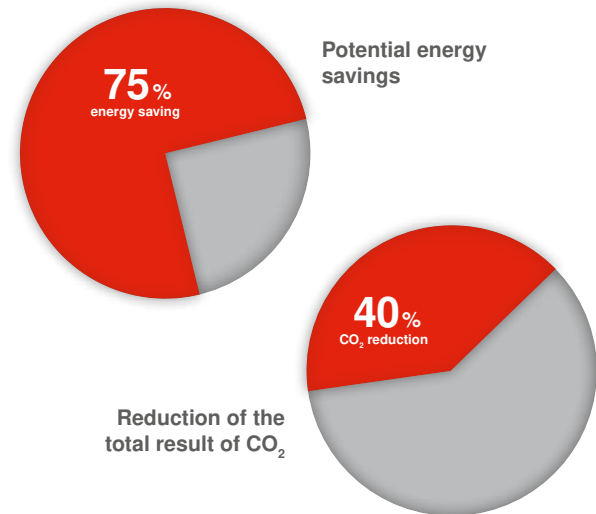
CERATIZIT relies only on business relationships with members of the TI-CMC (Tungsten Industry Conflict Minerals Council) who are known to be conflict-free tungsten producers or are applying for certification. CERATIZIT is a founding member of the TI-CMC working group, which has developed a standardised process to verify tungsten producers' compliance with requirements. With the support of TI-CMC, we are committed to the conflict-free procurement of tungsten and the adherence to TI-CMC directives.

www.ti-cmc.org



Potential savings for secondary raw materials

Based on a sustainable energy and environment management, the extraction of tungsten and cobalt from secondary raw materials through recycling is highly efficient.



> 9.000
employees



> 100.000
different products



> 1.000
patents and utility models

The benefit to you: we close the cycle from the secondary raw material to the finished product



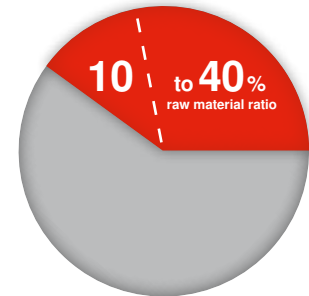
We would be happy to work with you in a long-term partnership to optimise the cycle from sales, scrap take-back and production through to resale. We look forward to hearing your suggestions. Please contact us at recycling@ceratizit.com.

It couldn't be simpler: we take care of the entire process

In both external and internal **processes** the CERATIZIT Group continually **optimises** the yield rate avoiding the accumulation of secondary raw materials. The **regrinding service** we offer to our customers also contributes decisively to sustainability.

Our repurchase price for cemented carbide is always based on the current market price. We organise every step of the process for you and supply quantity-specific containers and transport solutions free of charge.

Raw material ratio
in the CERATIZIT
product portfolio



> 200
employees in R&D



> 10
innovation awards



30 %
new products developed in the last 5 years

Headquarters:

CERATIZIT S.A.
LU-8232 Mamer
T. +352 31 20 85-1
E. info@ceratizit.com

www.ceratizit.com

Be part of our sustainable material cycle!

If you have further questions,
our experts are available at any time:

Stadler Metalle GmbH & Co. KG
T. +49 82 45 - 96 799 - 0
www.stadler-metalle.de
info@stadler-metalle.de

CERATIZIT Deutschland
www.ceratizit.com/recycling
recycling@ceratizit.com

