



Circular raw materials for the refractory and ceramic industry

A glowing green particle trail forms a circular shape against a dark green background. At the top of the circle, a bright light source emits a starburst effect. The trail is composed of many small, bright green particles that create a sense of motion and energy. The overall aesthetic is futuristic and high-tech.

■ The key force in closing the cycle

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About MIRECO

MIRECO is the result of RHI Magnesita and Horn & Co. Group joining forces. With our combined expertise, leadership and over 100 years of refractory history, we are able to tackle major challenges of our society and industry such as climate change and resource conservation.

Together with and for our customers we design circular solutions that provide high quality and performance, while saving CO₂ emissions. Join our mission of strengthening the circular economy in European refractories and contribute to transforming the industry.

MIRECO
MIRECO

■ The key force in closing the cycle



■ The key force in closing the cycle

Our Claim

Today, recycling is more important than ever. All industries bear the responsibility to use raw materials sparingly. Since 1956 our mission is to improve the life cycle of raw materials. For us, recycling is part of our DNA.

Thanks to our many years of experience, exceptionally skilled personnel and passion for what we do, we are the leading specialist for refractory recycling solutions.

To achieve a circular supply chain, it is necessary to use products made out of circular raw materials. We offer our customers the full range of services and products necessary to accomplish a closed raw material recycling cycle. All recycling concepts are individually tailored to our customers and based on our innovative CERO WASTE-Concept.

Circular raw materials for the refractory and ceramic industry

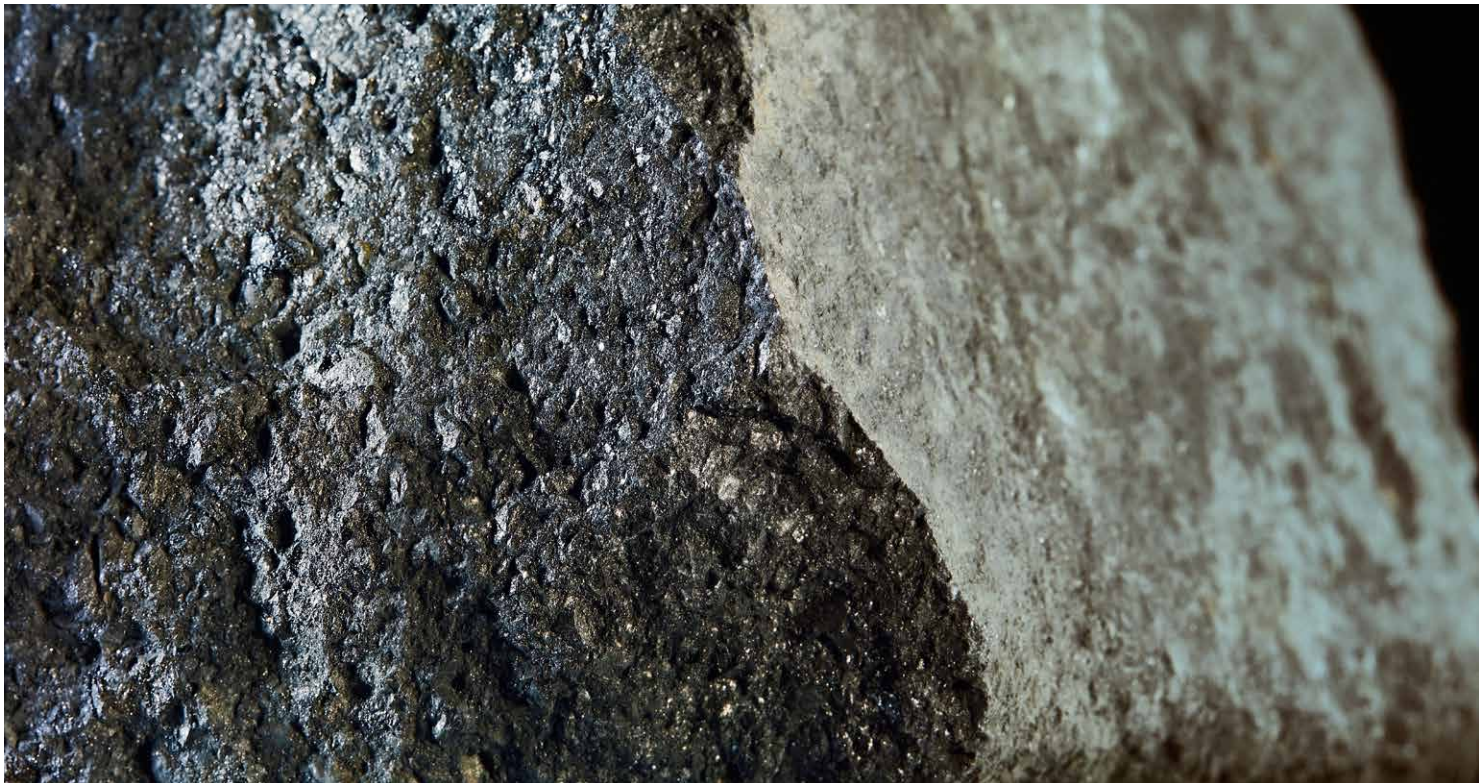
The purpose of modern circular raw material procurement management in the refractory and ceramics industry is to design a strategic supply chain that is sustainable and offers security of supply.

In order to be able to meet these requirements today, part of the supply needs must be covered with circular raw materials, in addition to the sources of primary raw materials. The decisive factor for the good performance of a circular raw material in the product is its quality that is ideally adapted to the application process.

We provide you with circular raw materials that have been obtained in accordance with our CERO (Continuous Economic Recycling Optimization) WASTE-Concept and the highest quality standards for refractory processing.

You get a high-quality circular raw material with end-of-waste status and defined circular raw material properties. Individual requests regarding technical specifications or grain structures can be taken into account during the manufacturing process.

Our sales team has a wide-ranging wealth of experience and is pleased to help you choose the circular raw material that suits your requirements.



CERO WASTE-Concept

Our CERO WASTE-Concept enables you to make the principle of closed-loop recycling a key business success factor.

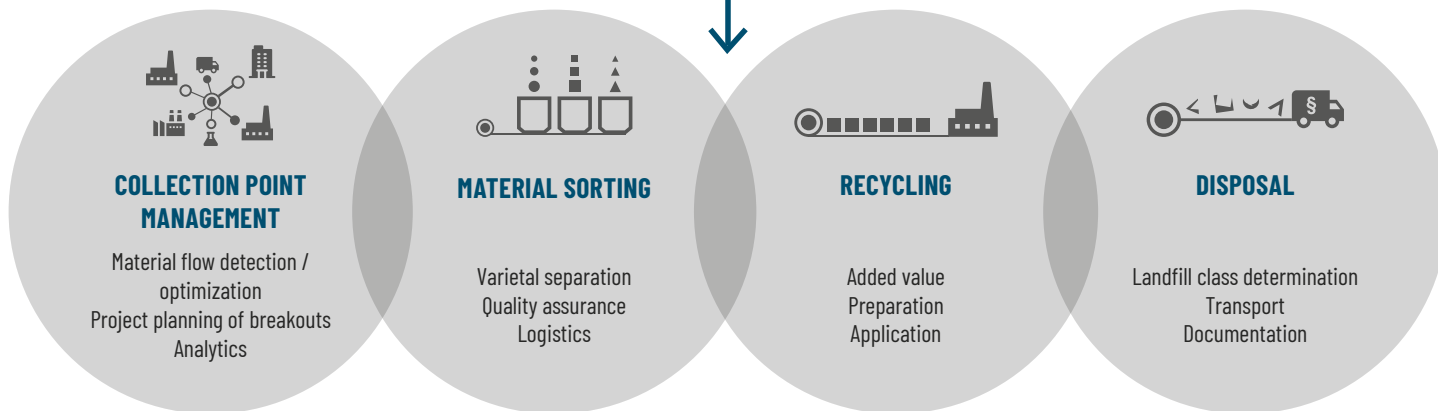
Together with our customers we give our used products a new lease of life which then re-enters the supply and value chain. Waste never enters landfill, enabling you to use resources responsibly and increase security of supply.

Our concept complies with the European Waste Framework Directive, guaranteeing process and legal security in terms of analysis, transport, documentation and disposal of waste.





 Steel industry
  Refractory industry
  Ceramic industry
  Cement industry
  Foundries
  Glass industry



Scan QR-Code and learn more.



Overview circular raw materials

Basic raw materials

Product	MgO	Al ₂ O ₃	SiO ₂	CaO	Fe ₂ O ₃	C	Cr ₂ O ₃
Mag-Carbon R 94A1	94.0 %	1.0 %	1.0 %	1.5 %	1.0 %	10.0 %	-
Mag-Carbon R 93A1,5	93.0 %	1.5 %	1.0 %	1.5 %	0.7 %	10.0 %	-
Mag-Carbon R 92A3	92.0 %	3.0 %	1.3 %	2.0 %	1.0 %	10.0 %	-
Mag-Carbon R 92A4,5 AOX	92.0 %	4.0 %	0.9 %	1.6 %	0.6 %	8.5 %	-
Magnesia R 90	90.0 %	1.5 %	3.0 %	2.0 %	2.5 %	-	-
Magnesia R 86F7	87.0 %	1.5 %	2.5 %	3.0 %	5.5 %	-	-
Magnesia R 95	95.0 %	0.6 %	1.0 %	1.5 %	0.8 %	-	-
Magnesia-Chrom R 59Cr18	59.0 %	6.0 %	3.0 %	2.0 %	12.0 %	-	18.0 %
Dolomit R	55.0 %	1.0 %	2.0 %	35.0 %	2.0 %	-	-
Magnesia-Forsterit R 68	68.0 %	2.0 %	15.0 %	2.5 %	9.0 %	-	2.0 %

Non-basic raw materials

Product	MgO	Al ₂ O ₃	SiO ₂	CaO	Fe ₂ O ₃	C	TiO ₂	ZrO ₂	Na ₂ O	SiC
Alumina 95	1.8 %	95.0 %	0.5 %	1.5 %	0.2 %	-	-	-	-	-
Bauxit R	1.0 %	79.0 %	14.0 %	0.5 %	1.5 %	-	2.5 %	-	-	-
Andalusit R 59	0.5 %	60.0 %	35.0 %	0.3 %	3.0 %	-	0.5 %	-	-	-
Schamotte R 40	-	42.0 %	50.0 %	-	1.7 %	-	1.8 %	-	-	-
Andalusit R 61	0.6 %	61.0 %	35.0 %	0.3 %	1.3 %	-	0.6 %	-	-	-
Alu-Carbon R 82Z6	1.7 %	82.0 %	7.5 %	0.6 %	0.4 %	5.0 %	-	5.5 %	-	-
Alu-Carbon R 77	1.8 %	77.0 %	17.0 %	0.5 %	1.0 %	10.0 %	-	-	-	4.0 %
AMC R	10.5 %	83.5 %	2.0 %	-	1.0 %	8.0 %	1.5 %	-	-	-
ASC R 68	1.0 %	68.0 %	12.0 %	3.0 %	1.0 %	2.0 %	1.5 %	-	-	10.0 %
AZS R Z35 RG	-	48.0 %	14.0 %	-	0.2 %	-	-	35.0 %	-	-
Kohlenstoff R	-	-	-	-	-	85.0 %	-	-	-	-
AZS R Z30N4	0.3 %	50.0 %	14.0 %	-	-	-	-	30.0 %	4.0 %	-



Basic raw materials

Mag-Carbon R 94A1

Raw material base

Magnesia carbon

Source

Steel industry

Application examples

Refractory raw material



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	C
94.0 %	1.5 %	1.0 %	1.0 %	1.0 %	10.0 %

Mag-Carbon R 93A1,5

Raw material base

Magnesia carbon

Source

Steel industry

Application examples

Refractory raw material



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	C
93.0 %	1.5 %	0.7 %	1.5 %	1.0 %	10.0 %

Mag-Carbon R 92A3

Raw material base

Magnesia carbon

Source

Steel industry

Application examples

Refractory raw material



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	C
92.0 %	2.0 %	1.0 %	3.0 %	1.3 %	10.0 %

Mag-Carbon R 92A4,5 AOX

Raw material base

Magnesia carbon

Source

Steel industry

Application examples

Refractory raw material



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	C
92.0 %	1.6 %	0.6 %	4.0 %	0.9 %	8.5 %

Magnesia R 90

Raw material base

Magnesia

Source

Glass, steel, cement industry

Application examples

Refractory raw material



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂
90.0 %	2.0 %	2.5 %	1.5 %	3.0 %

Magnesia R 86F7

Raw material base

Sorted magnesite bricks

Source

Steel industry

Application examples

Refractory raw material, metallurgical aggregate



MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂
87.0 %	3.0 %	5.5 %	1.5 %	2.5 %

Magnesia R 95

Raw material base

Magnesia

Source

Steel industry

Application examples

Refractory raw material



MgO	CaO	Al ₂ O ₃	SiO ₂	Fe ₂ O ₃
95.0 %	1.5 %	0.6 %	1.0 %	0.8 %

Magnesia-Chrom R 59Cr18

Raw material base

Recycled material from
magnesia-chrome bricks



Source

Steel, cement, non-ferrous metal industry

Application examples

Refractory raw material

MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	Cr ₂ O ₃
59.0 %	2.0 %	12.0 %	6.0 %	3.0 %	18.0 %

Dolomit R

Raw material base

Sorted, fired dolomite bricks



Source

Steel industry

Application examples

Refractory raw material

MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂
55.0 %	35.0 %	2.0 %	1.0 %	2.0 %

Magnesia-Forsterit R 68

Raw material base

Magnesia and forsterite bricks



Source

Heating furnaces

Application examples

Refractory raw material

MgO	CaO	Fe ₂ O ₃	Al ₂ O ₃	SiO ₂	Cr ₂ O ₃	Na ₂ O+K ₂ O
68.0 %	2.5 %	9.0 %	2.0 %	15.0 %	2.0 %	0.5 %



Non-basic raw materials

Alumina R 95

Raw material base

Alumina

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	CaO	Fe_2O_3	MgO
95.0 %	0.5 %	1.5 %	0.2 %	1.8 %

Bauxit R

Raw material base

Sorted used bauxite bricks

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	CaO	Fe_2O_3	TiO_2	MgO	Na_2O+K_2O
79.0 %	14.0 %	0.5 %	1.5 %	2.5 %	1.0 %	0.4 %

Andalusit R 59

Raw material base

Andalusite

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	CaO	Fe_2O_3	TiO_2	MgO	Na_2O+K_2O
60.0 %	35.0 %	0.3 %	3.0 %	0.5 %	0.5 %	0.6 %

Schamotte R 40

Raw material base

Sorted fireclay bricks

Source

Others

Application examples

Refractory raw material



Al_2O_3	SiO_2	Fe_2O_3	TiO_2	Na_2O+K_2O
42.0 %	50.0 %	1.7 %	1.8 %	1.2 %

Andalusit R 61

Raw material base

Sorted andalusite bricks

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	CaO	Fe_2O_3	TiO_2	MgO	Na_2O+K_2O
61.0 %	35.0 %	0.3 %	1.3 %	0.6 %	0.6 %	0.6 %

Alu-Carbon R 82Z6

Raw material base

Refractory material recovered from slide plates containing zircon

Source

Steel industry

Application examples

Refractory raw material, secondary metallurgy



Al_2O_3	SiO_2	CaO	Fe_2O_3	MgO	C	ZrO_2
82.0 %	7.5 %	0.6 %	0.4 %	1.7 %	5.0 %	5.5 %

Alu-Carbon R 77

Raw material base

Sorted aluminium-carbon bricks

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	CaO	Fe_2O_3	MgO	SiC	C
77.0 %	17.0 %	0.5 %	1.0 %	1.8 %	4.0 %	10.0 %

AMC R

Raw material base

Alumina-magnesia-carbon

Source

Steel industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	Fe_2O_3	TiO_2	MgO	C
83.5 %	2.0 %	1.0 %	1.5 %	10.5 %	8.0 %

ASC R 68

Raw material base

High-alumina cement containing SiC

Source

Steel industry

Application examples

Refractory raw material, Secondary metallurgy



Al_2O_3	SiO_2	CaO	Fe_2O_3	TiO_2	MgO	SiC	C
68.0 %	12.0 %	3.0 %	1.0 %	1.5 %	1.0 %	10.0 %	2.0 %

AZS R Z35 RG

Raw material base

Alumina zirconia bricks

Source

Glass industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	Fe_2O_3	ZrO_2	Na_2O+K_2O
48.0 %	14.0 %	0.2 %	35.0 %	2.0 %

Kohlenstoff R

Raw material base

Carbon bricks

Source

Others

Application examples

Carburizing agents, tap hole mixes



Carbon content

85.0 %

AZS R Z30N4

Raw material base

Alumina-zirconia

Source

Glass industry

Application examples

Refractory raw material



Al_2O_3	SiO_2	ZrO_2	MgO	Na_2O
50.0 %	14.0 %	30.0 %	0.3 %	4.0 %

Customer Benefits



