

HYPERION MATERIALS & TECHNOLOGIES

# Hyperion Carbide Recycling



At Hyperion, we are serious about sustainability and our efforts to reduce the negative impact on our environment.



**HYPERION**  
Materials & Technologies

# HYPERION - DO MORE WITH LESS

Did you know that your products containing tungsten carbide can be recycled? Recycling used carbide is a critical activity and Hyperion is a market leader.

Hyperion, through our Carbide Recycling Program, purchases used carbide tools and products from our customers in order to convert them back into usable raw materials for future production. We use a controlled, certified chemical recycling process that ensures these “new” materials are identical to materials produced from mined ore.

## WHY RECYCLE?

Recycling creates several “win-win” situations for Hyperion and our customers.

### CUSTOMER SOLUTION

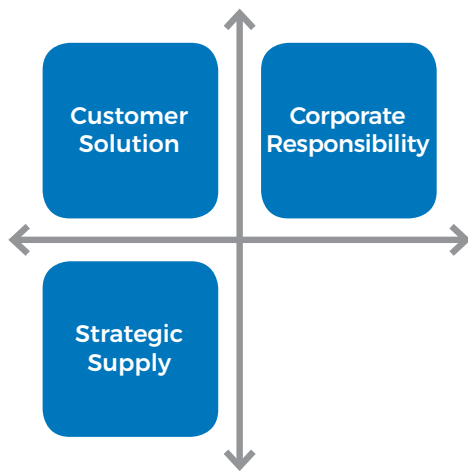
This is a customer-focused offering. We provide an easy-to-use service and guarantee that your carbide is recycled in an environmentally friendly manner. Our offer prices are competitive in the market and transportation to the recycling facility is arranged and paid for.

### CORPORATE RESPONSIBILITY

Hyperion is committed to sustainability, and recycling is a great example of how we are reducing the company’s environmental footprint. Manufacturing new tungsten carbide products from recycled material uses up to 70% less energy and emits up to 40% less carbon dioxide compared to using tungsten extracted from ore.

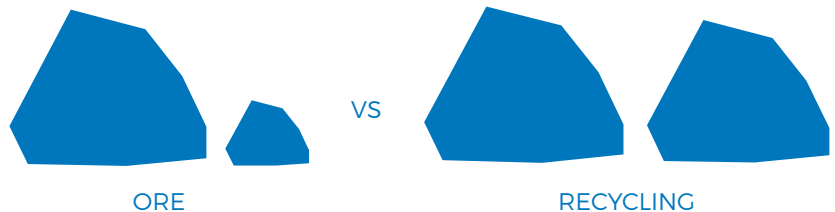
### SUSTAINABLE SUPPLY

Tungsten is a rare element. Consider that aluminum makes up about 8% of the world’s crust while tungsten accounts for less than 0.0001%! This tiny amount is also unevenly distributed across the globe, with 60-70% of the world’s known reserves in China. Thus, without recycling, the world’s tungsten supply is dependent on a small amount of ore from one country. Hyperion’s focus on recycling is customer driven, ensuring a sustainable supply of raw materials to meet your finished product needs.



### DID YOU KNOW?

15 tons of mined earth is needed to yield the same amount of tungsten as when recycling just 70 kg of carbide. Recycling 1.2 kg of scrap will return 1 kg of carbide.



## HYPERION - A UNIQUE MATERIAL CEMENTED CARBIDE

Hyperion is truly an expert in cemented carbide. Cemented carbide is one of the most successful composite engineering materials ever produced. Cemented carbide's unique combination of strength, hardness and toughness satisfies the most demanding applications.

A key feature of cemented carbide is the potential to vary its composition so that the resulting physical and chemical properties ensure maximum resistance to wear, erosion, deformation, fracture, corrosion, and oxidation. In addition, a wide variety of shapes and sizes can be produced using modern powder metallurgical processing techniques.



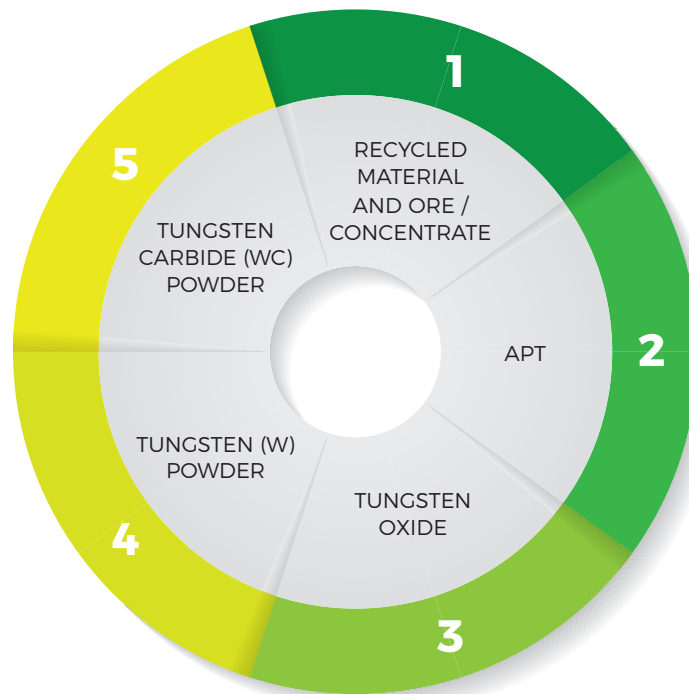
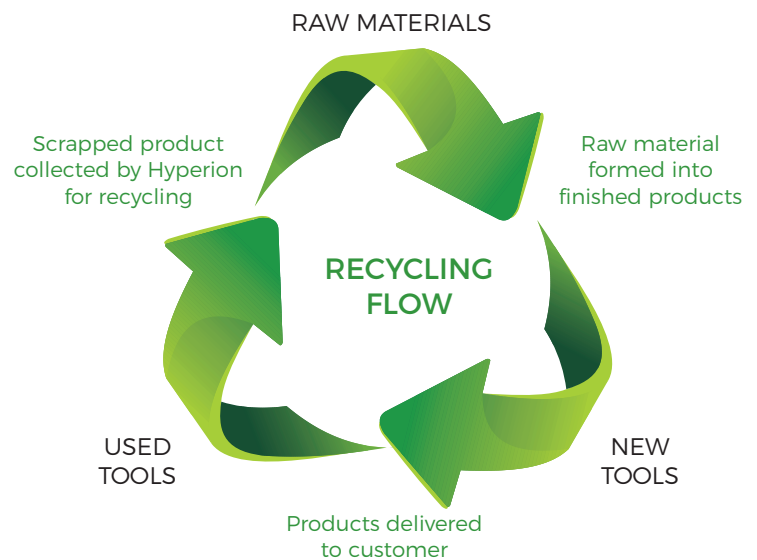
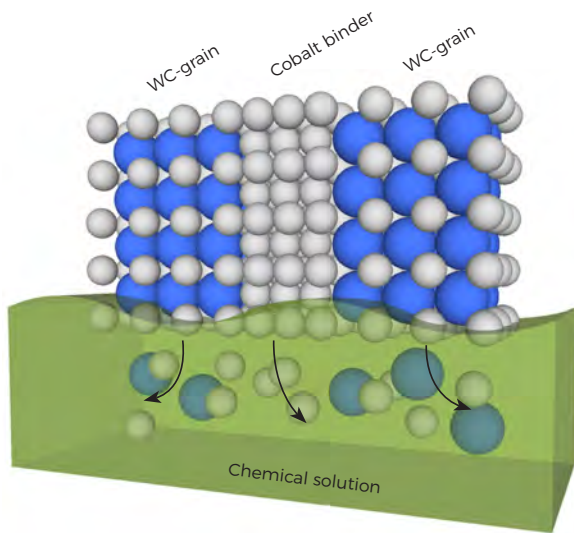
# HYPERION - THE SCIENCE OF RECYCLING

Hyperion uses a chemical recycling process that is the most comprehensive method available. Tungsten and cobalt are chemically separated from other materials, and all of their unique characteristics, such as grain size, are erased. The tungsten is converted back to the ammonium para-tungstate (APT) form, an early point in the tungsten carbide manufacturing process.

This APT from recycling is then merged with APT from the ore supply stream (known as virgin material) before the next steps of the manufacturing process occur. As a result, there is one uniform output of high quality tungsten carbide, not two separate ones. This is an important point and a true indication of how recycled materials cannot be viewed differently from mined materials in regard to quality.

Recycling is the right thing to do for our customers, our company and the environment.

Hyperion works with strategic partners to ensure an efficient conversion of scrap into quality raw materials.



# HYPERION - JOIN A PARTNERSHIP FOR A GREENER WORLD

At Hyperion, we are serious about sustainability and our efforts to minimize our impact on the environment. Recycle with us.

## PROCESS ASSURANCE

When you recycle with Hyperion, be assured that your sold parts:

- Stay in our controlled supply chain
- Are converted back to a high quality raw material through a certified chemical process
- Are used to manufacture new cemented carbide products with the same superior quality, batch after batch.

## RECYCLE WITH US: 8 EASY STEPS

We make recycling easy for you. When you are ready to participate, simply contact your Hyperion representative and follow these steps:

# 8 STEPS



## PURCHASE CONDITIONS

- Payment arranged with purchase order and invoice process
  - Separate business transaction from sale of new products
- Competitive prices are established each month
  - More consistent and predictable than dealers
- Payments are made directly to bank account
  - Simple, on time, less paperwork
- Shipments are arranged and paid by Hyperion
  - Packaging is supplied upon request.

# HYPERION - MATERIAL WE RECYCLE\*

## USED TOOLS AND PRODUCTS

- Can tooling
- Hot rolls
- High pressure high temperature tooling
- Rotary cutters
- Wire drawing dies
- Solid carbide pieces (mixed, separated).

## SOFT MATERIALS\*\*

- Grinding sludge
- Unusable powder
- Floor sweepings.

## SPECIALTY PRODUCTS\*\*

- Grinding filters
- Paper rolls.



\*Program availability can vary by region and material quality/state/weight.

\*\*Case-by-case basis with pre-approval. Not available in all regions.

## LEARN MORE - RECYCLING RESOURCES

- Visit our internet sites: [www.hyperionmt.com](http://www.hyperionmt.com)
- Contact your **Sales Team Member** or **Customer Service**
- Contact your regional Hyperion **Recycling Specialist**



# HYPERION - PACKAGING & SHIPPING GUIDELINES

Your recycled carbide will be picked up and delivered by truck. It is important to package it securely to prevent spillage and damage during the shipment. Please follow the guidelines below and note that Hyperion will provide steel drums if needed.

The preferred method is using steel drums strapped to wooden pallets. Some products, such as hot rolls, rotary cutters, or grinding filters, may require special packaging or variations to this process. Wooden crates may be the best option. Please verify with your salesperson or recycling specialist.

## PACKAGING MATERIAL REQUIRED

- Wooden pallets
- Steel drums
- Steel banding
- Top wood sheeting
- Plastic shrink wrap (optional).

## DOCUMENT CHECKLIST (provided by Hyperion, unless noted otherwise)

- Packing list (created by customer, to include list of each container and weight)
- Lot number label
- Freight bill of lading
- Annex VII form (Europe only).

## PROCESS CHECKLIST

- Each drum is labeled with the correct lot number
- Old labels are removed or painted over
- Drums have tight fitting lids and lock rings
- Pallets are in good condition and strong enough for load
- Load is centered and evenly balanced
- Packing list includes the number of pieces and gross/tare weights of each
- Weight per drum does not exceed 250 kg / 600 lb (less than 75% full)
- Weight per pallet does not exceed 2000 kg / 4400 lb.



### DRUM PREPARATION

- Sturdy pallet
- Quality drums with lock rings
- Lot labels attached
- No old labels visible.



### EXAMPLE: 4 DRUMS PER PALLET

- Centered load
- Plastic wrap
- Steel bands
- Wood sheeting on top.



### EXAMPLE: 2 DRUMS PER PALLET

- Two wood pieces keep bands from slipping.

