

How much is a scrap catalytic converter worth?

What is a Catalytic converter?

A Catalytic converter is a device that helps your car produce cleaner emissions. It does so by using a catalyst, which is referred to as a catalytic converter. It consists of a substrate that accelerates a chemical reaction, to turn harmful gases from the exhaust system, into less polluting ones. This catalytic converter can also help the environment in another way, through catalytic converter recycling.

In addition to reducing waste, recycling catalytic converters is economically profitable because of the Platinum Group Metals (PGM's) found in them. The catalyst component inside the catalytic converter is typically a combination of Platinum (Pt), Palladium (Pd) and Rhodium (Rh). These are all costly platinum group metals, or PGM's.

With the proper sorting and processing of catalytic converter scrap, these metals can be recovered and reused to manufacture new catalytic converters and other equipment, in turn then sustaining the mining industry of these metals and pro longing the reserves in South Africa.



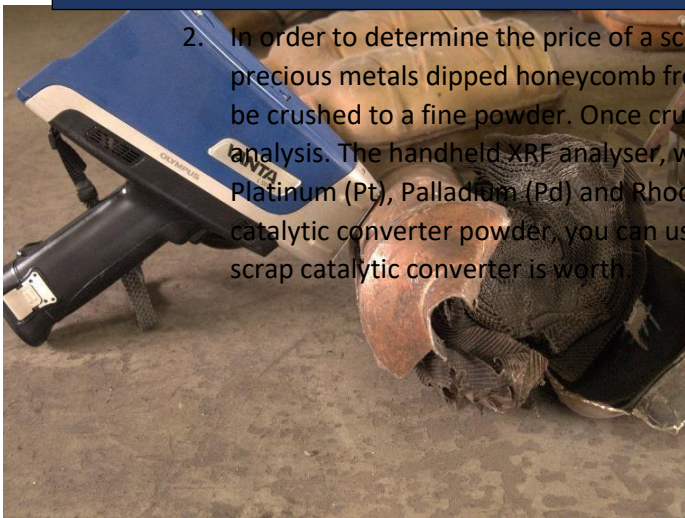
2 Steps to finding out how much is a scrap catalytic converter worth?

1. Knowing the value of catalytic converters, is merely impossible if you are a catalytic converter recycling company. When clients enter your workshop with a sealed or canned catalytic converters, the price of the scrap catalytic converter is easily determined, by taking the barcode from the housing of the catalytic converter and using the Ecotrade application. This application will automatically price the catalytic converter.



But it is not always that easy, as the Ecotrade application does not have all the barcodes in the system. **How much is a scrap catalytic worth now?**

2. In order to determine the price of a scrap catalytic converter, the precious metals dipped honeycomb from the converter must be crushed to a fine powder. Once crushed to a fine powder, analysis. The handheld XRF analyser, will give you the value of the Platinum (Pt), Palladium (Pd) and Rhodium (Rh) in the catalytic converter powder, you can use the Ecotrade application to determine how much your scrap catalytic converter is worth.



Why measure catalytic converter powder with an XRF analyser?

1. For fast, accurate and representative results, sample preparation is required. Leading to a sustainable recycling business.
2. Trying to analyse the surface of a ceramic honeycomb can produce misleading results, leading to revenue loss.
3. The accurate identification of these metals, is vital since they are extremely valuable

An alternative way to find out how much the catalytic converter is worth

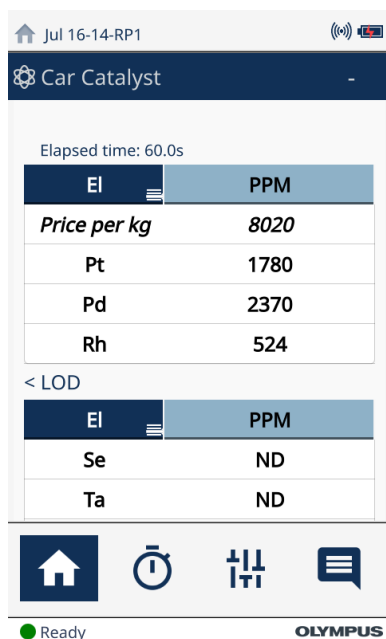
The Olympus VANTA handheld XRF analyser, can reflect the value of the catalytic converter powder on the screen by using the pseudo element's function. This value can be per gram, per tonne or per kg.

The formula is quite simple:

The total value of the catalytic converter Powder, is the concentration shown on the analyser for Platinum, Palladium and Rhodium, multiplied by their respective daily stock rates, (either per gram or per kilogram). This value is then divided by 1000 in order to get the value per kg. This value is then multiplied by the weight of the catalytic converter powder, which will give you the true value of the catalytic sample.

In figure 1, it will all make sense:

Fig.1



The XRF analyser will perform this calculation:

$$\text{Value per kg(V)} = ((\text{Pt}\% \times \text{Pt stock rate}) + (\text{Pd}\% \times \text{Pd stock rate}) + (\text{Rh}\% \times \text{Rh stock rate})) \times 10$$
$$(V) = ((1780\text{ppm} \times \text{R}513) + (2370\text{ppm} \times \text{R}1243) + (524\text{ppm} \times \text{R}7959)) / 1000$$
$$(V) = \text{R } 8020 \text{ per kg}$$

This calculation you will have to perform yourself:

$$\text{Sample Value (SV)} = \text{Value per kg} \times \text{Weight of sample in Kg}$$
$$(SV) = \text{R}8020 \times 0.92\text{kg}$$
$$(SV) = \text{R}7378.40$$



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