

TECHNICAL CLEANLINESS

*ALL IN ONE PLACE, SERVICE,
TRAINING, CONSULTING
AND EQUIPMENTS*

ISO 16232:2018 | VDA19.1:2015 | VDA 19.2:2010 | ISO 4406 | ISO 4407

Technical Cleanliness

The biggest service provider of cleanliness analysis of South America

Cleanliness is nothing more than a set of norms and methods to determine the degree of dirt of each piece and standardize analysis methods to classify acceptable particle classes in distinct components.

Automobile companies are at the vanguard when it comes to cleaning, and it doesn't come from today, as the accuracy of parts and systems for combustion engines and components has been perfected over the years. Today a growing number of automotive parts/components have specified requirements regarding the degree of dirt, technical designs of parts already present in addition to the dimensional tolerances such as CCC (Component Cleanliness Code) that the part must meet, main reasons for this are:

- Lower tolerances make systems more sensitive to dirt/particles;
- Cleaning and service life of systems/components are correlated;
- Large particles can cause system loss.

In mid 2005 the Non-Governmental Organization ISO (International Organization for Standardization) elaborated the standard, ISO 16232, which establishes the extraction methods and parameters for analysis. This standard has also defined what equipment is needed to determine the degree of parts dirt. The analysis procedure begins in a controlled environment, this control refers to the temperature of the environment and the number of particles in the air, extraction and analysis equipment are specially developed to determine the degree of dirt/-cleanliness.

Our Services

We are the experts

Cleanliness Analysis

We are a service provider that can analyze, small, media and large parts in according with VDA 19.1:2015 and ISO 16232:2018 in a cleanroom ISO 7.

Decay Curve

Qualification/validation of extraction in according with VDA 19.1:2015 and ISO 16232:2018.

Extended Analysis

Chemical composition of particle, for this we have a sophisticate Electronic Microscope with EDX model Phenom XL G2, magnification 160 – 220.000X

Training

More than 100 training performed, the biggest automobile manufacturers were certificates by Edge Solutions, the teacher has more than 15 years of experience in this market.

Consulting

VDA 19 Part2, Cleanliness concept, assembly, Environment, Logistics, Personnel, Assembly Equipment, Clean room in according ISO 14644

Turn Key Solution

All in one place, equipment, consumables(filter membrane), cleanliness cabinets, training, particle Trap and Particle Stamp and much more.



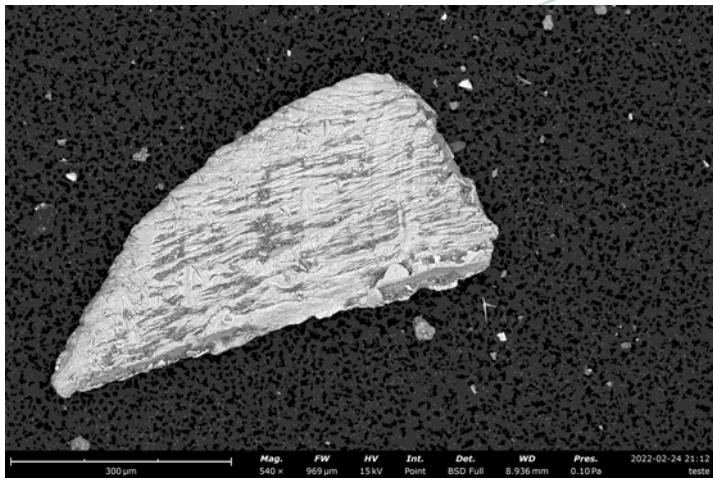
Microscope LAB at Enge Solutions

Cleanliness Analysis and our **Cleanliness Lab**

More than 30.000 cleanliness analysis performed.

Our extraction lab uses 03 cleanliness cabinets for small and large parts, our cleanroom is certificated in according with ISO 14644 – ISO 7. Our microscope lab uses 02 automatic particle counting Jomesa, 01 Particle Scanner and 01 SEM/EDX Phenon GL X2

All our procedures are in according VDA 19.1:2015, ISO 16232:2018 and ISO 4406/4407.



Metallic Particle by SEM/EDX, chemical composition

We are **Experts**

Our **Report**

About

The report contains all the information regarding the extraction method, fluid used in extraction, equipment, photo show the largest metal and non-metal particle and gravimetric result.

The report model generated by ENGE Solutions follows the standard of the European report, available in Portuguese and English languages.



Extraction Particle Laboratory

"A success story.
ENGE SOLUTIONS was founded in
2004 focused on the development of
cleaning processes and after starting the
representation of the German company
Gläser GmbH, the largest service provid-
er in Europe, China and the United
States, Enge Solutions became the largest
service provider in cleanliness analysis of
South America and the only one with the
ability to analyze small and large parts."

Address

Rua Eçauna 428
Jardim Umarizal
CEP 05754-040
São Paulo/SP | Brasil

E-mail

cleanliness@engesolutions.com.br

Telephone

+55 11 3483-8552
+55 11 3804-0668

