

PURITY CONCEPT

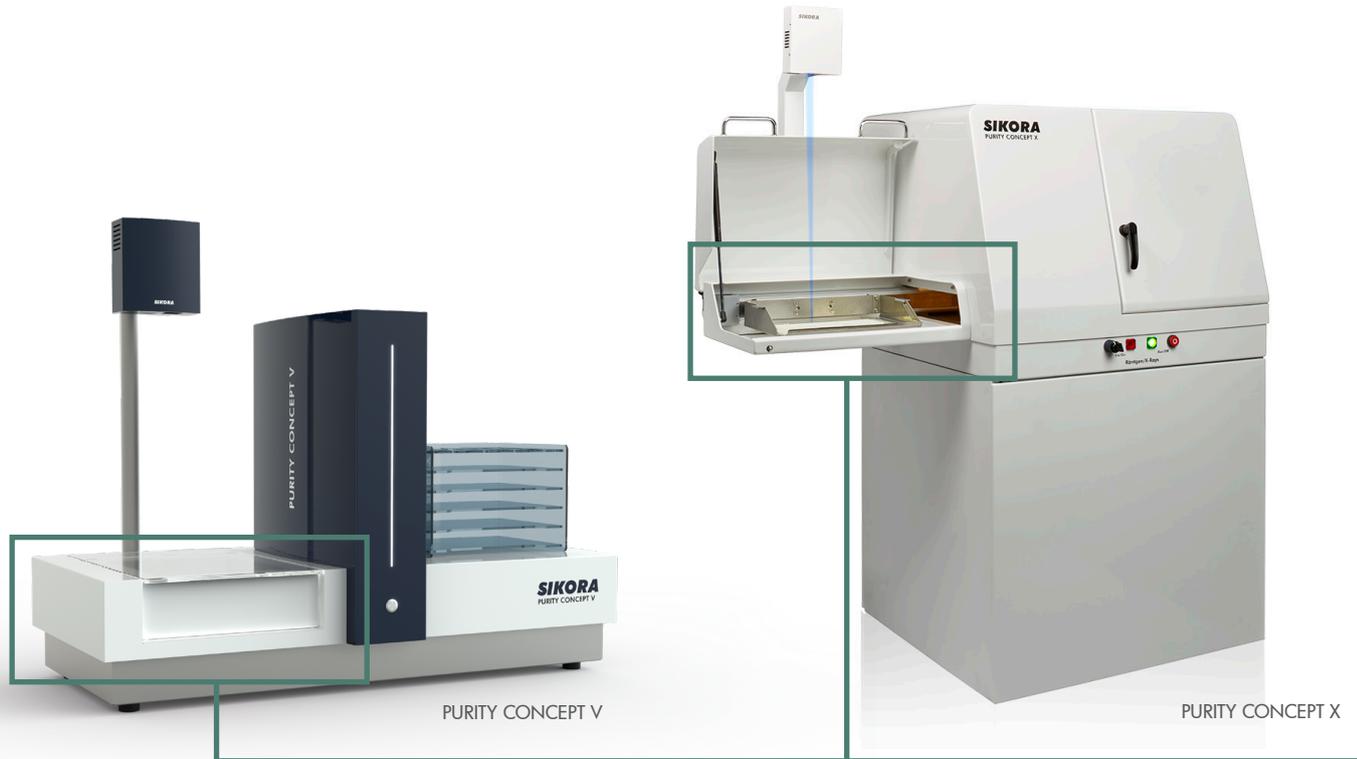
Systems

Inspection and analysis of plastic materials
Systems for quality control in offline and laboratory use



PURITY CONCEPT Systems

Inspection and analysis of plastic materials



PURITY CONCEPT Systems:

Strong technologies for the highest material quality

With the groundbreaking models of the PURITY CONCEPT Systems, SIKORA offers the versatile potential of its systems for offline inspection, analysis and evaluation of plastic materials in the area of Non Destructive Testing (NDT). Equipped with X-ray technology (X), optical camera (V) or infrared technology (IR), the systems are to be used, depending on the application, for process control, offline sample testing as well as incoming goods inspection. The PURITY CONCEPT Systems detect contamination down to a size of 50 µm. Regarding the integrated technologies, SIKORA draws on several decades of experience in the cable as well as hose and tube industry.

PURITY CONCEPT X

The PURITY CONCEPT X, based on X-ray technology, detects and analyzes for example metallic contamination both on the surface and inside of transparent and intransparent, colored pellets, flakes, sheets and injection moulded parts.

PURITY CONCEPT V

With an optical camera, the PURITY CONCEPT V inspects and analyzes any colored and transparent plastic pellets, flakes, films/tapes and injection moulded parts.

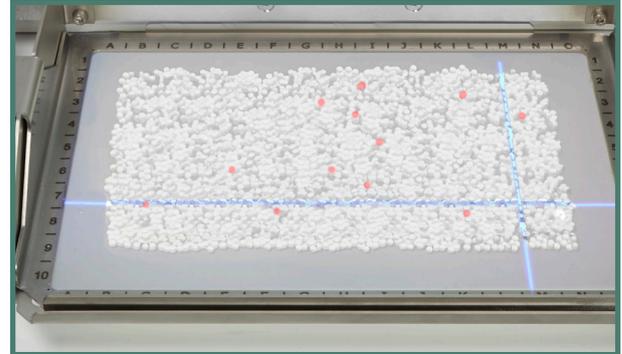
Typical features

- Non Destructive Testing (NDT) for granulate and injection moulded parts
- Innovative concept for comprehensive analysis requirements (inspection of pellets, flakes, films/tapes, sheets, injection moulded parts)
- Laboratory operation, incoming goods inspection
- X-ray, infrared or optical inspection and analysis
- Quality control and documentation

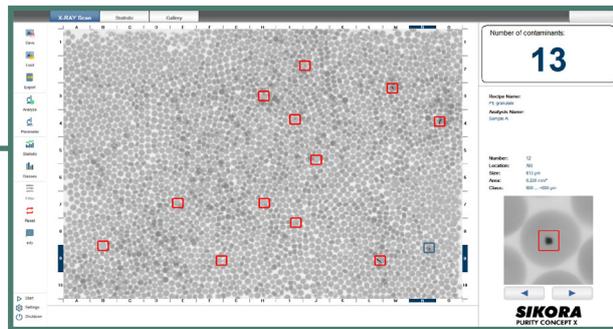
The PURITY CONCEPT V combines the advantages of a light table with an automatic offline material control. By analyzing the recorded images, contamination on the surface of the material are detected, visualized and evaluated according to size automatically. In transparent material, contamination can also be detected inside the sample. A clear allocation of the contamination and follow-up inspection are possible at any time and do not have to be done manually by the operator. Thus, the system contributes significantly to quality control and process optimization.

Innovative measuring principle

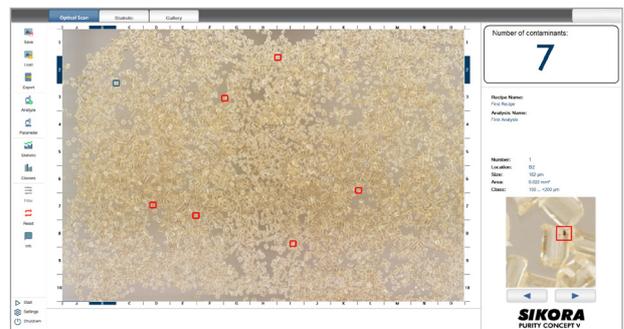
For the inspection of small quantities, the test material is spread on a tray, moved to the inspection area and automatically inspected with one of the three camera systems within seconds. A projector highlights contaminated material in color directly on the tray (here in red). Pellets with a contaminant are simultaneously shown on the monitor, including the size of the contamination, and marked (red squares). Individual pellets with a contaminant can be selected and zoomed in (blue square in X-ray image). At the same time, they are optically visualized on the tray by the cross hairs.



Tray with material samples (here pellets)

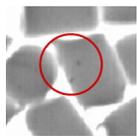


X-ray image of pellets on monitor (PURITY CONCEPT X)

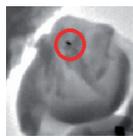


Color camera image of pellets on monitor (PURITY CONCEPT V)

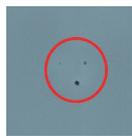
Examples of detected contamination by means of X-ray technology:



Pellets



Flakes



Films

Visualization and analysis of measuring values

In combination with a PC that is included in delivery, detected contamination are visualized at all systems and the number and size numerically displayed. This data provides the users with valuable information on the processes.

The evaluation of the measurement data includes an image file of detected contaminated pellets as well as a statistical evaluation of the testing results.



Size class statistics of contaminated pellets (PURITY CONCEPT X)

PURITY CONCEPT Systems

Inspection and analysis of plastic materials

Technical Data

PURITY CONCEPT Systems

Measuring Principle*
PURITY CONCEPT X: X-ray technology PURITY CONCEPT V: Optical CMOS Line Scan color camera
Application
Pellets, flakes, films/tapes, sheets and injection moulded parts
Detectable Contamination
PURITY CONCEPT X: metallic, inhomogeneities, cross-contamination PURITY CONCEPT V: contamination and black specs in transparent material, respectively, on non-transparent material and discolorations
Smallest Detectable Contamination Size
X-ray: 50 µm (cube 3D), 50 x 50 x 50 µm Optics: 50 µm (square 2D), 50 x 50 µm
Permissible Environmental Temperature/Pellet Temperature
+ 5 to + 45 °C
Interfaces
USB Optional: LAN
Power Supply
230 V AC ± 10 %, 50/60 Hz, approx. 1,200 W
Dimensions
PURITY CONCEPT X: 1,340 x 1,297 x 758 mm (excl. wheels) PURITY CONCEPT V: 1,090 x 575 x 911 mm (width x height x depth)

* The PURITY CONCEPT Systems devices can be equipped with infrared technology on demand

Technical data is subject to change

Perfectly combined: Online inspection and sorting as well as offline inspection and analysis of pellets

For comprehensive inspection and analysis of pellets, SIKORA recommends the combination of the PURITY SCANNER and PURITY CONCEPT Systems. After the PURITY SCANNER has detected and automatically sorted out contamination online, the contaminated pellets are analyzed offline by a model of the PURITY CONCEPT Systems. This perfect interplay of online and offline inspection, sorting and analysis allows for a comprehensive control of the material purity and provides information for avoiding future contamination.

SIKORA – Your partner in quality

SIKORA is a manufacturer and global supplier of innovative measuring, control, inspection, analysis and sorting technology for the wire and cable, hose and tube, sheet as well as optical fiber and plastics industries.

The products are exclusively manufactured at the headquarters in Bremen/Germany. With more than 250 employees worldwide, 14 offices and numerous regional representatives, the medium-sized company provides customers with innovative product solutions and individual services. Innovation, product quality and customer satisfaction have been defining the daily activities at SIKORA for 45 years.



Certified according to
DIN EN ISO 9001

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