PURITY CONCEPT
Systems

Inspection and analysis of plastic materials
Systems for quality control in offline and laboratory use
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) or optical camera (V), 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 molded 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 molded parts.

Typical features

- Non Destructive Testing (NDT) for granulate and injection molded parts
- Innovative concept for comprehensive analysis requirements (inspection of pellets, flakes, films/tapes, sheets, injection molded parts)
- Laboratory operation, incoming goods inspection
- X-ray 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 sample tray, moved to the inspection area and automatically inspected by the respective camera system within seconds. A projector highlights contaminated material in color directly on the sample tray (here in blue). Pellets with a contaminant are simultaneously shown on the monitor, including the size of the contamination, and marked (blue squares). Individual pellets with a contaminant can be selected and zoomed in (red square in color camera image). At the same time, they are optically visualized on the sample tray by the cross hairs.

Visualization and analysis of measuring values
PURITY LAB PRO is an analysis software for the visualization and detailed evaluation of detected contamination. The data provides the users with comprehensive information about the process and the material quality.

The PURITY LAB PRO software includes the following features:
- Image gallery with all detected contamination
- Statistics regarding size, area and number of the detected contamination
- Import function of previously recorded image material for follow-up analysis
- Comprehensive export functions (images, parameters and statistics)
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 ADVANCED and PURITY CONCEPT Systems. After the PURITY SCANNER ADVANCED 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, sheets, metals 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 international 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.