

# Material Composition Data from Material Assay Testing

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A background image showing two women in a modern office or laboratory setting. One woman, with long dark hair, is wearing a red patterned top and looking towards the right. The other woman, with blonde hair and glasses on her head, is wearing a blue top and pointing towards a screen or device. The scene is brightly lit with overhead lights.

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## Challenges in creating material declarations in IDMS

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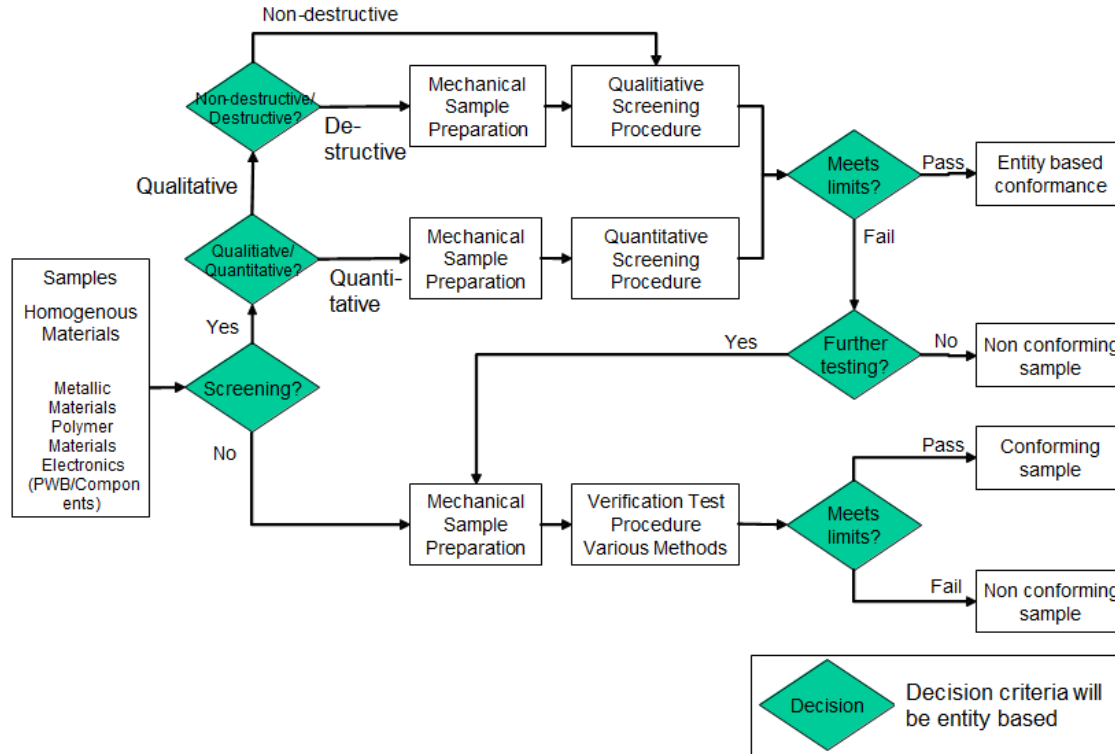
- Product consists of many components, so a lot of individual data is required
- There are declarations from the supplier, but these do not cover the required scope
- The assignment of declarations to the actual product is not clearly given
- Only 80% of the necessary data can be collected, even after lengthy research
- The data formats in which declarations are available are not compatible

## Material Assay Testing - Opportunities

- Chemical analysis enables the determination of the material composition (matrix) and the determination of other ingredients: monomers, additives, contaminants
- In this way, regulatory and/or customer-specific requirements can be checked
- Only one physical sample is required for this
- Further information about the materials, such as trade names or sources of supply, are not required

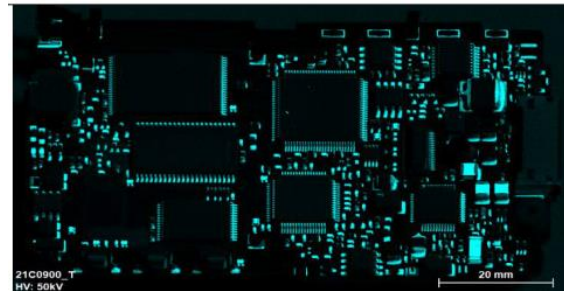
# Material Assay Testing Process

# Material Assay Testing Process– IEC 62321





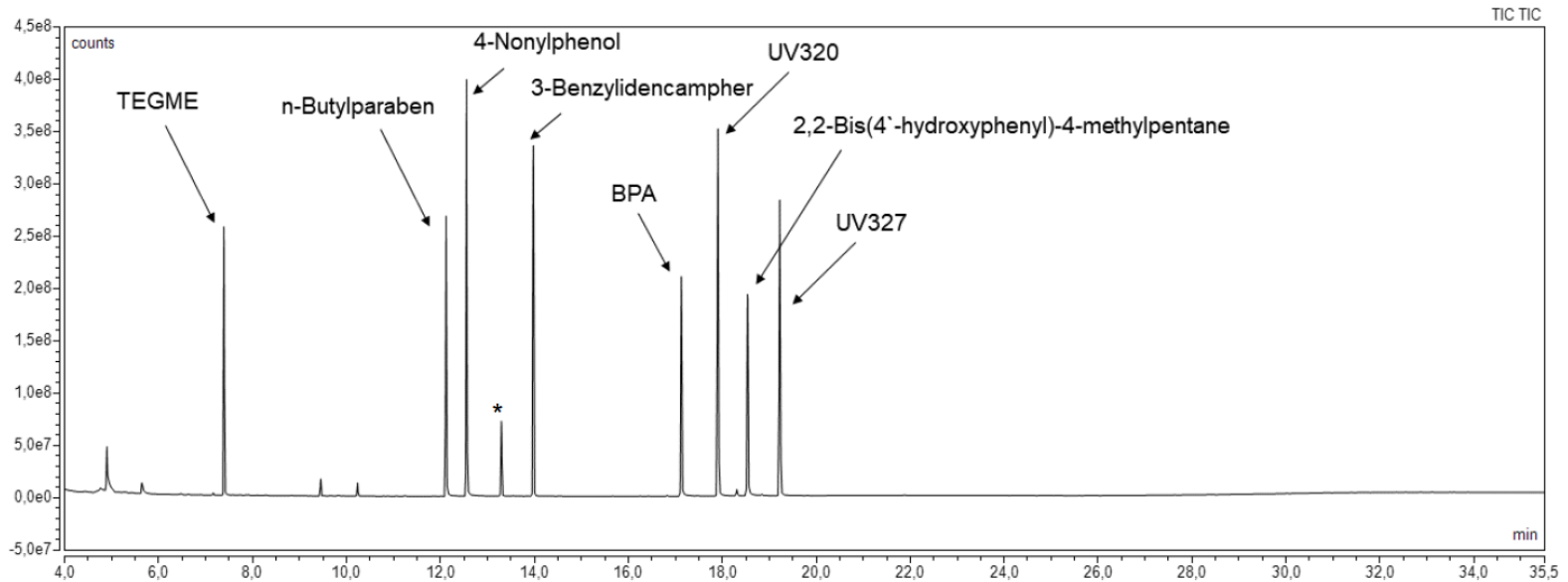
# Element distribution on printed circuit boards



Beispiel: Blei Pb

x,y-Scan von Leiterplatten mittels ED-RFA: Beispiel Blei auf Leiterplatten

# Investigation of organic compounds using GC/MS



GC/MS Kalibrationspektrum#6

## Material testing process

- Disassembly of the product down to the level of homogeneous materials
- Sample preparation for the testing
- Conducting the test
- Evaluation of the measurement results
- Transfer of the data into a database-readable format (XML, IMDS)

## Results

- Received material identity
- Absence of critical substances
- Detection of chemical elements and organic substances

# Material Assay testing compared to material declarations and Data bases



Data Management using Data Bases	Material Assay
Data Validity	Data Amount
Complete Data	Traceability
Availability of Data	Sequential update
Trade Names and Intellectual Properties	

## Interface to material declaration

# VDE Material Declaration Tool – IPC 1752 A, B



VDE MaDe - IPC 175X Materials Composition Declaration 0.10.9.18262

File Certificates Tools ?

IPC Declaration Product and Subproduct Information Additional Data

Supplier Product Declaration

Form Type \* Request/Reply Sectionals MaterialInfo Subsectionals

Version 2.0

\* Required Field

A - Query/Reply  
B - Material Class  
C - Material Summary  
D - Homogeneous Material

VDE MaDe - IPC 175X Materials Composition Declaration 0.10.9.18262

File Certificates Tools ?

IPC Declaration Product and Subproduct Information Additional Data

Product and Subproduct List

- DO2050 - H93824 Filling fixture repeater pump
  - DO2050.02 - H93824 Filling fixture repeater pump, Metal housing
  - DO2050.03 - H93824 Filling fixture repeater pump, White plastic pin
  - DO2050.04 - H93824 Filling fixture repeater pump, Rubber feet
  - DO2050.05 - H93824 Filling fixture repeater pump, Seal ring
  - DO2050.06 - H93824 Filling fixture repeater pump, Black plastic 1
  - DO2050.07 - H93824 Filling fixture repeater pump, Screw 2
  - DO2050.08 - H93824 Filling fixture repeater pump, Metal pin
  - DO2050.09 - H93824 Filling fixture repeater pump, Black plastic cap
  - DO2050.10 - H93824 Filling fixture repeater pump, Black plastic 2
  - DO2050.11 - H93824 Filling fixture repeater pump, Screw 3

Product Information

Product Homogeneous Material Attachments

Product	Homogeneous Material	Material Class	Mass	UoM	Level	Substance Category	Substance	CAS	Mass	UoM	Conc
	Steel 2		570,2	g	Supp	Metal	Fe	7439-89-6	541,69	g	95
							Zn	7440-66-6	28,51	g	5

Materialanalysedaten werden halbautomatisch übertragen

## Summary

- Complete material records are obtained in a reasonable time frame
- Information from the supply chain can be validated
- Partial analysis cost efficient
- Material test reports can be electronically linked to the declaration
- In addition, the integration of certificates is possible



# Thank you for your attention

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