

Recovery screening report

Materials reuse feasibility assessment.

Client	<i>(Company name)</i>
Sample ID / Code	<i>(Client sample code)</i>
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Date	<i>(DD MMM YYYY)</i>
Prepared by	<i>(Company / contact person)</i>

Confidentiality & disclaimer

This report is provided for preliminary evaluation purposes only and is based solely on the sample(s) received. It does not constitute a full-scale process design, industrial guarantee, or safety assessment. Results may vary with feedstock variability, sampling method, and operating conditions. Unless otherwise agreed upon in writing, the information contained herein is confidential and intended for the client's internal evaluation.

1. Executive summary

Decision: Promising/conditionally promising/not recommended at the screening stage

Potential outputs: ZnO, CuO, NiO, CoO /spent catalyst or sorbent/other

Key findings

Main risks/unknowns

Recommended next step

2. Objective and scope

Objective

Assess the potential for materials reuse/recovery from the contractor's feedstock.

What is included in this screening:

basic incoming analytics and qualitative/quantitative screening tests,
preliminary output quality check (COA),
preliminary risks and required next steps.

What is not included:

full industrial flowsheet, detailed operating recipe, or scale-up design,
full EHS/HAZOP, permitting, and waste classification,
guaranteed economics for full scale.

3. Feedstock description

Client-provided information:

Origin/process
Known composition TDS/SDS/MSDS
Known hazards

As-received observations:

Physical form
Describe color/odor
Sample mass received
Storage condition

4. Incoming analytics

Elemental composition analysis

Composition	Result	Unit	LOQ	Method	Notes

Phase composition analysis

Phase	Approx. content (wt.%)	Method	Notes

Additional relevant properties:

particle size (if relevant),
BET surface area (if relevant).

5. Screening test overview

SIA Catalyco uses a wet chemical process to extract ZnO, CuO, NiO, CoO, and mixtures thereof. This process is not described in detail in this report. In general terms, the process involves the selective dissolution of target components, a stage of purifying the solutions from impurities, and the subsequent production of controlled precursors/oxides with specified characteristics.

6. Results

Final product quality

Parameter	Result	Unit	Method	Acceptance / Target
Main component				
Key impurities				
Phase purity				
Moisture / LOD				
BET (if relevant)				
PSD (if relevant)				

Material balance

Stream	Description	Mass (g)	Mass (%)	Key notes	Disposition
Feed					
Product					
Residue					
Liquor					
Wash					

Preliminary performance indicators

Estimated recovery/yield of target component
Selectivity/contamination drivers
Notes on variability sensitivity
Target recovered product form

Based on the screening results, the recovered material is expected to be produced in the following general form: powder.

Further processing steps may be required to produce a material suitable for specific industrial applications.

7. Potential applications and disposal options

Based on the results of the analysis and screening tests described in Sections 4–6, a conceptual assessment of potential downstream applications for the extracted material will be conducted. The primary objective is to identify potential industrial applications for the extracted product and to highlight key quality parameters that may influence its marketability. This assessment is purely indicative and does not constitute a product specification, qualification, or confirmation of market suitability. Final suitability for use depends on several factors, including purification requirements, product consistency, regulatory restrictions, and end-user qualifications.

Potential application segments

Based on the measured composition and phase characteristics, the recovered material may be suitable for one or more of the following industrial application segments.

Application segment	Typical product form	Key quality requirements	Preliminary fit	Notes
Main component				
Key impurities				
Phase purity				
Moisture / LOD				
BET (if relevant)				
PSD (if relevant)				

The suitability assessments provided above represent a preliminary qualitative evaluation based on the analysis results obtained during the screening phase.

Key quality factors for potential applications include chemical composition, active ingredient content, quantitative characteristics of major impurities following extraction.

Secondary parameters:
particle size distribution,
surface area (BET),
morphology.

8. Risks, unknowns, and mitigations

Risk/ Unknowns	Cause	Impact	Likelihood	Mitigation

9. Recommended next steps

Batch-to-batch consistency program

Inputs: 2–10 kg feedstock, duration: 10–14 weeks

Deliverables:

reproducibility checks on many subsamples/lots,
parameter window exploration,
demonstration product.

10. Fee

The fixed fee for the screening is EUR 5,000 (five thousand euros), excluding VAT and sample shipment costs.

Appendices

A1. Photos of feedstock and products

A2. Raw analytical outputs

A3. Methods and instrument settings