

USER GUIDE

Chain of Custody tool

provided by Minespider

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1. Foreword - The Basics

Welcome to Minespider - we're thrilled you are taking the next step with us. Before we dive into the day-to-day use of Minespider, let's take a step back and recap the underlying structure and infrastructure of Minespider's product offerings.

Minespider has developed a blockchain infrastructure that was specifically designed for the minerals industry. We run our own blockchain with a Proof-of-Authority Consensus Mechanism. The protocol offers digital certificates or so-called **"Product Passports"** that link data collected from different supply chain participants to unique identifiers, as well as QR-Codes that can be attached to physical material shipments. The Minespider infrastructure consists of the following elements:

- The Minespider Protocol: A protocol implemented on Minespider's own blockchain
- The Minespider SDK: An open-source Software Development Kit that allows users to develop their own app on the Minespider blockchain (see [here](#) for the documentation, and [here](#) and [here](#) for the repositories)
- The Minespider API: API access allows users to integrate Minespider with their already existing software infrastructure (see [here](#) for documentation)
- Minespider Software Services: A set of standard and premium backend services and microservice tools to improve system performance and enable data analytics and management.
- The Minespider App: A dashboard for companies to manage the certificates, keys, transactions and data stored on Minespider.

This manual is an introduction to the Minespider App and the Chain of Custody tool.

A final word on data: the Minespider Protocol has at its core a method of securely storing and transmitting raw material provenance data in the form of digital certificates according to the following principles:

- When a participant purchases certified material they receive access to its supply chain history;
- Participants are able to see data made transparent to them from their upstream suppliers;
- Participants cannot see data from other participants on the chain unless their supply chains are connected or the data is 'public' (see below).
- Non-participants do not have access to any supply chain transparency data without having the respective key. This includes Minespider.



We have two types of certificates:

- **Entity Certificate** - contains company-level information which does not change often (for example on a yearly level) and can be a business licence, permits, certifications or any other company level document relevant for due diligence needs.
- **Shipment Certificate** - contains shipment-level information specific to one shipment, such as type of material, grade, weight, sourcing details, and other traceability related information.

The Minespider Protocol employs a “Russian doll” data structure where keys to access supply chain history stored in the Minespider Certificate are passed as a nested, encoded data packet. To accomplish this, data is stored in three layers:

- **Public Layer** is unencrypted and visible to all users of the blockchain, whether or not they share a supply chain.
- **Transparency Layer** contains data which should be visible to participants who share a supply chain.
- **Private layer** contains data visible only to the immediate participants of the supply chain.

You can choose where you want to store each individual piece of data. With that in mind, let’s look at how you do that, specifically within the Chain of Custody (CoC) tool.

Still unsure about the underlying infrastructure? Please reach out for more in-depth information.

2. What is the Chain of Custody (CoC) tool

The Chain of Custody tool is built on the Minespider blockchain. It is specifically designed for tracking raw materials for the upstream parties, from the mine to smelter segment of the supply chain. It has two overall functions:

- It provides a simple platform to record chain of custody data. This data can be used to indicate or support conformance required by the RMI for smelters and refiners.
- The tool can also be used to connect the downstream to the upstream, fulfilling the need for more transparent and traceable supply chains with the aim to increase the level of due diligence or adapt it to changing regulations.

A visual representation including all potential mine to smelter supply chain participants is presented on Image 1 below. However, these can vary from case to case depending on the operations of companies. For instance, in the case of vertically integrated companies they may only include the steps directly from mine to smelter, instead of having a trader or processing company in between.

In any case what Image 1 provides is an overview of all potential types of participants that can use the CoC tool. The end goal is a more efficient chain of custody system and traceability details that can serve both upstream and downstream companies.

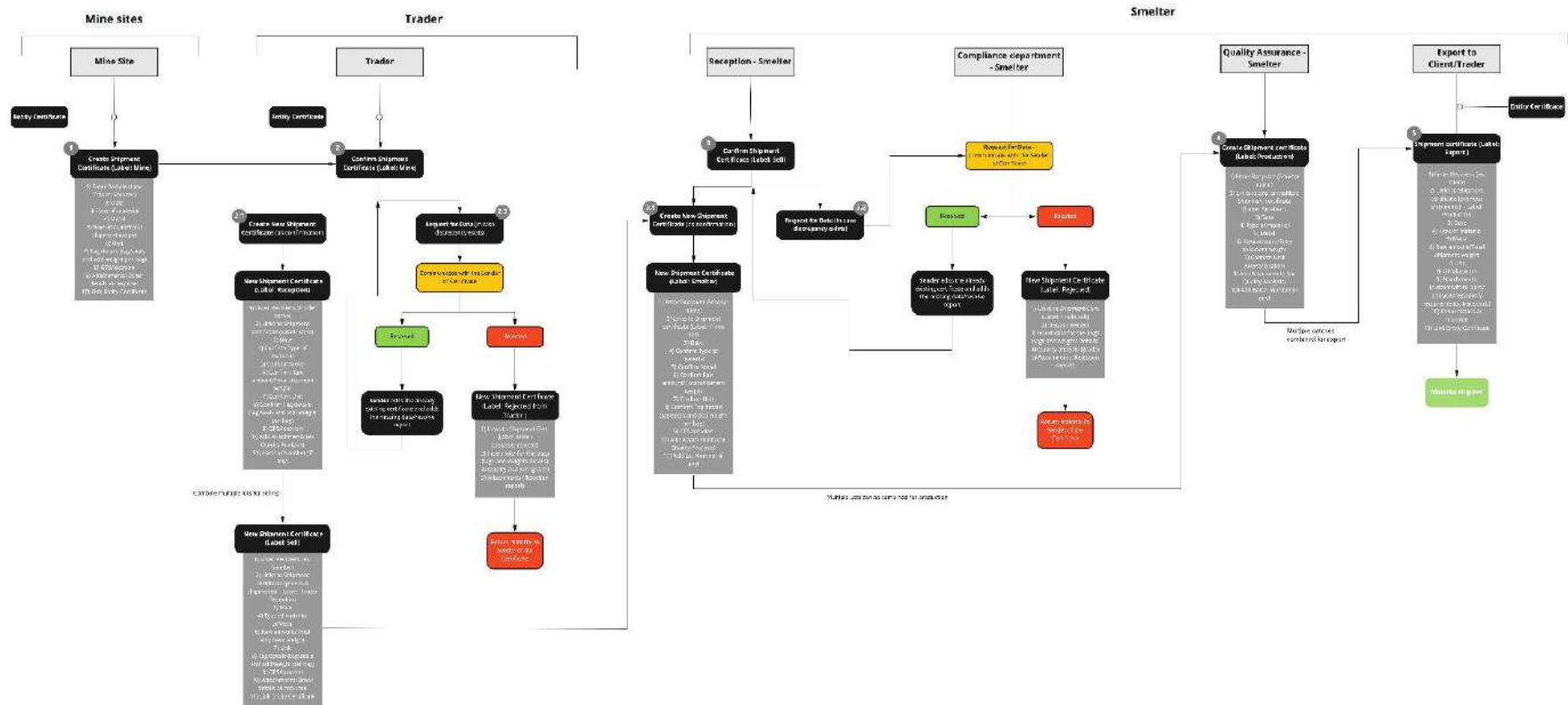
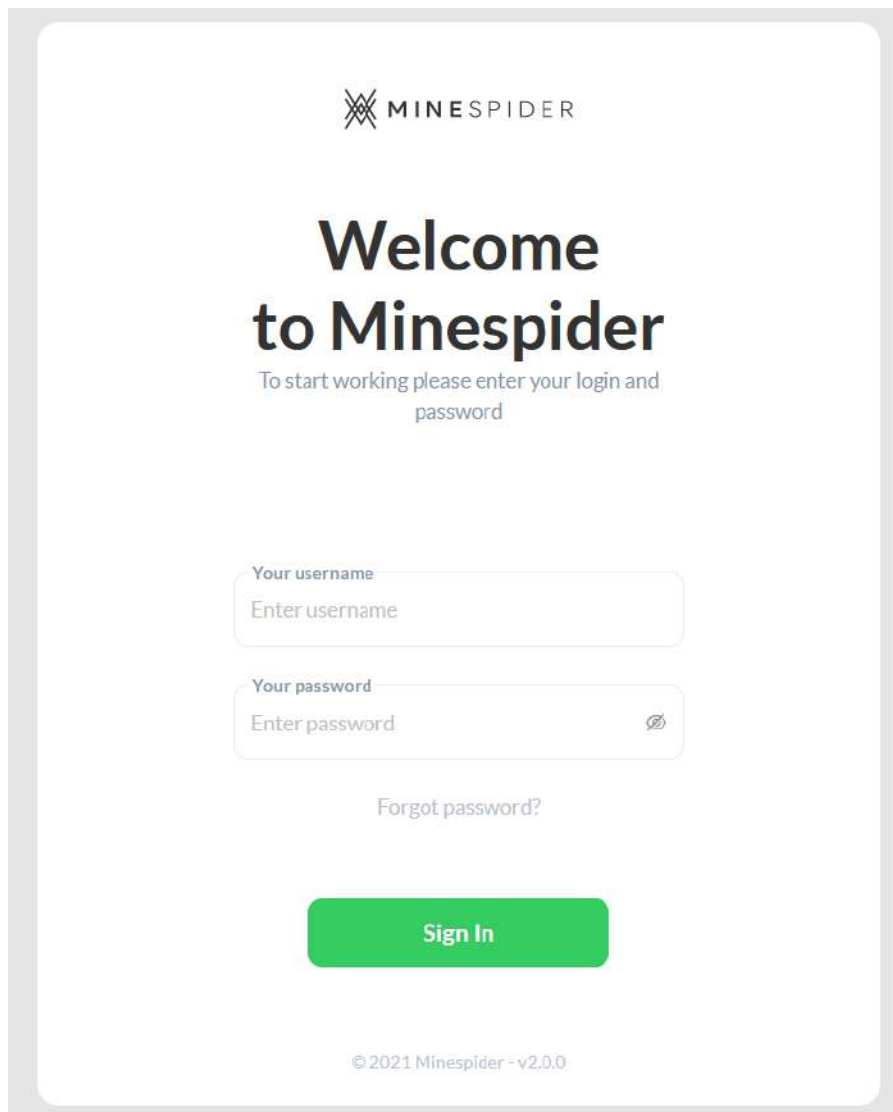


Image 1. Mine to smelter supply chain participants

3. Overview

First, let's get an overview of the basic functionalities of the app. When you visit the website, www.app.minespider.com, you will see the following prompt to log in (Image 2). If you have already received an invitation with instructions to set up your account from a supplier or colleague of yours, you can go ahead and sign in with the email address and password you registered when you signed up. If you forgot your password, click the **"Forgot password"** option and you will receive an email with further instructions.



The screenshot shows the Minespider login interface. At the top is the Minespider logo. Below it, the text "Welcome to Minespider" is displayed in a large, bold font. Underneath, a smaller line of text says "To start working please enter your login and password". There are two input fields: "Your username" with the placeholder text "Enter username", and "Your password" with the placeholder text "Enter password" and a toggle icon for password visibility. Below the password field is a link that says "Forgot password?". At the bottom of the form is a green button labeled "Sign In". At the very bottom of the page, there is a copyright notice: "© 2021 Minespider - v2.0.0".

Image 2. Log in window

3.1 The Dashboard

When logging in, you are taken to the main dashboard (Image 3). From here you can go on to explore the different features and functionalities of the app. You are able to:

- Manage your account and add your team members
- Create entity certificates
- Create shipment certificates
- Get an overview over your customers and suppliers
- Choose the application language

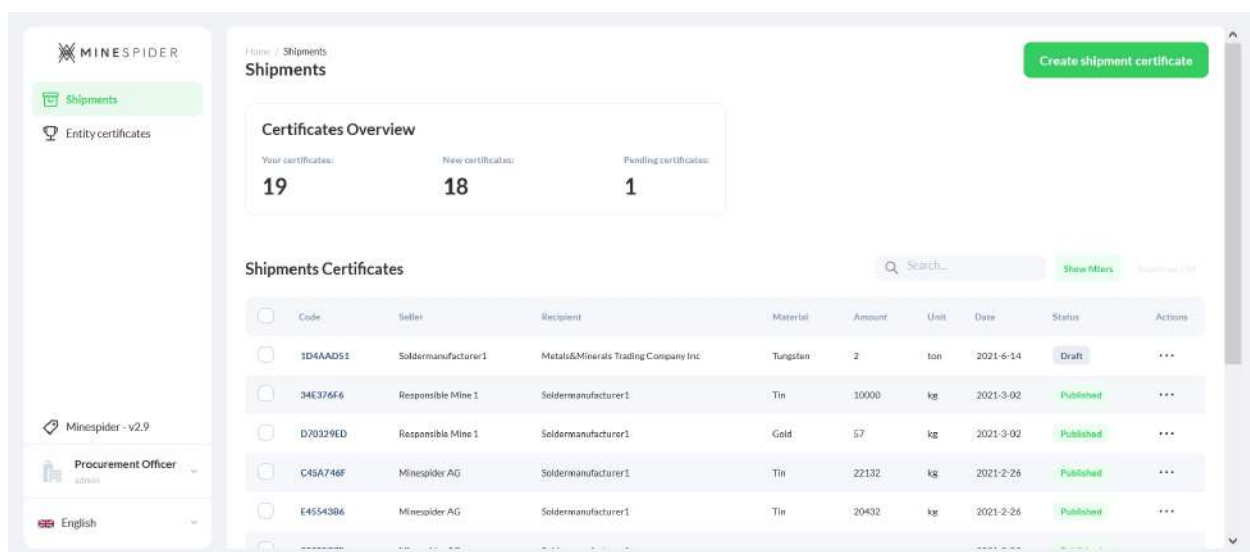
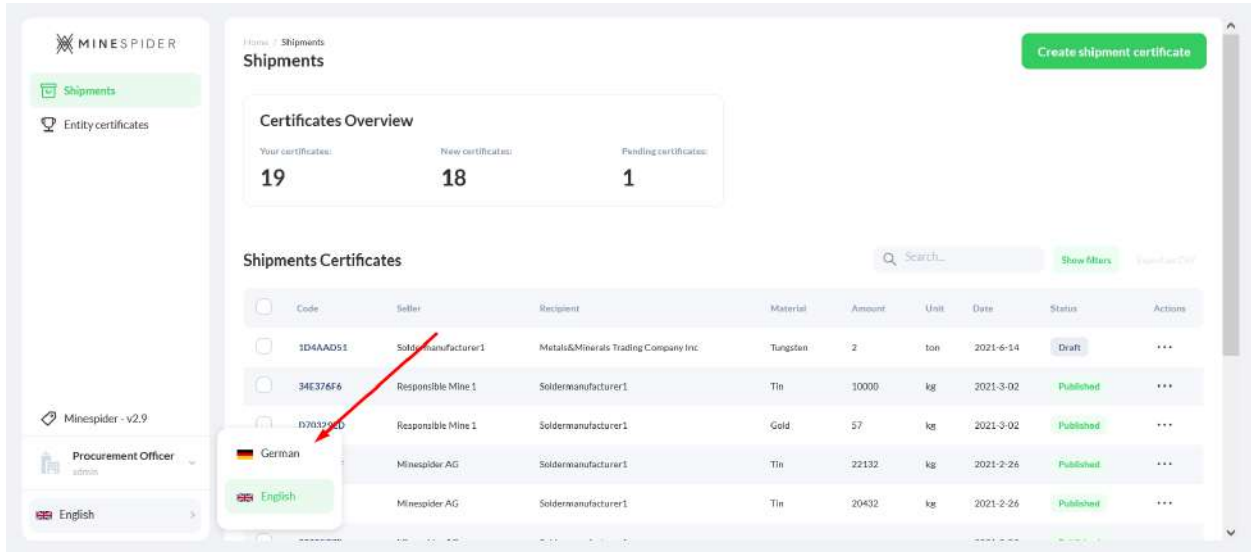


Image 3. Main dashboard (shipment dashboard)

You can start by adapting the language at the bottom left corner (Image 4). At the moment we offer English and German, but are planning on expanding that soon, starting with Spanish and French. If you have any particular language needs, please do get in touch with your dedicated Minespider project manager.



The screenshot shows the MINESPIDER main dashboard. On the left, there is a sidebar with the MINESPIDER logo, a 'Shipments' button, and an 'Entity certificates' button. Below these, it says 'Minespider - v2.9' and 'Procurement Officer admin'. At the bottom of the sidebar, there is a language selection dropdown currently set to 'English'. In the main content area, the 'Shipments' section is active, showing a 'Certificates Overview' with counts: 'Your certificates: 19', 'New certificates: 18', and 'Pending certificates: 1'. Below this is a 'Shipments Certificates' table with columns: Code, Seller, Recipient, Material, Amount, Unit, Date, Status, and Actions. A red arrow points to a language selection dropdown menu that is open, showing 'German' and 'English' options. The 'English' option is highlighted. The table contains several rows of certificate data, including codes like '1D4AAD51', '34E376F6', and 'D70329ED', with various materials like Tungsten, Tin, and Gold.

Code	Seller	Recipient	Material	Amount	Unit	Date	Status	Actions
1D4AAD51	Soldermanufacturer1	Metals&Minerals Trading Company Inc.	Tungsten	2	ton	2021-6-14	Draft	...
34E376F6	Responsible Mine 1	Soldermanufacturer1	Tin	10000	kg	2021-3-02	Published	...
D70329ED	Responsible Mine 1	Soldermanufacturer1	Gold	57	kg	2021-3-02	Published	...
	Minespider AG	Soldermanufacturer1	Tin	22132	kg	2021-2-26	Published	...
	Minespider AG	Soldermanufacturer1	Tin	20432	kg	2021-2-26	Published	...

Image 4. Main dashboard - language adjustment

In the next section we will take you through all these options, and explain what you can do with them.

4. Managing your account and adding members

To manage your account, hover over the account name and select **“Profile”** (Image 5).

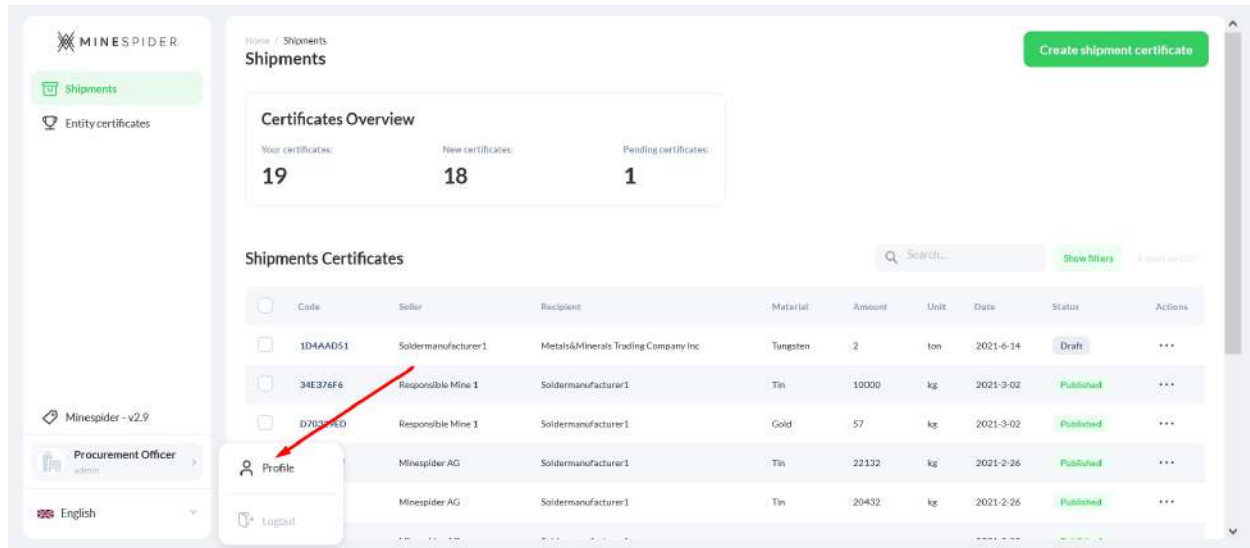


Image 5. Manage your account

Once you click on **“Profile”**, on the right hand side you will be able to update your email address, change your password, and update your personal information (Image 6).

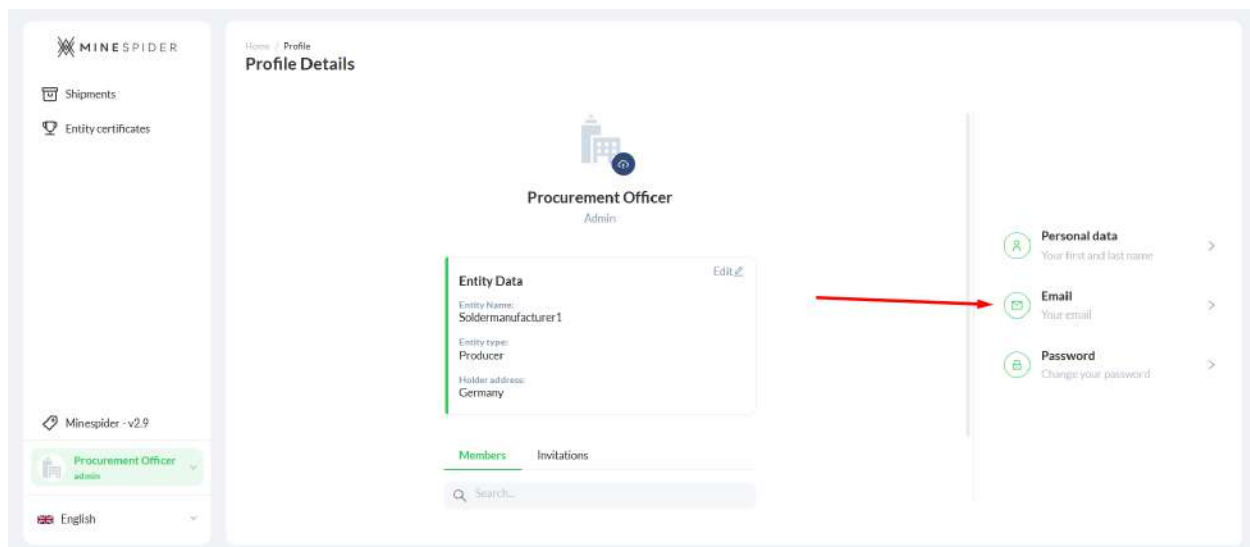


Image 6. Update your personal information

In this section, if you are an admin you can also add team members to your account. To do so, scroll down to member and click on **“Add New”** (Image 7).

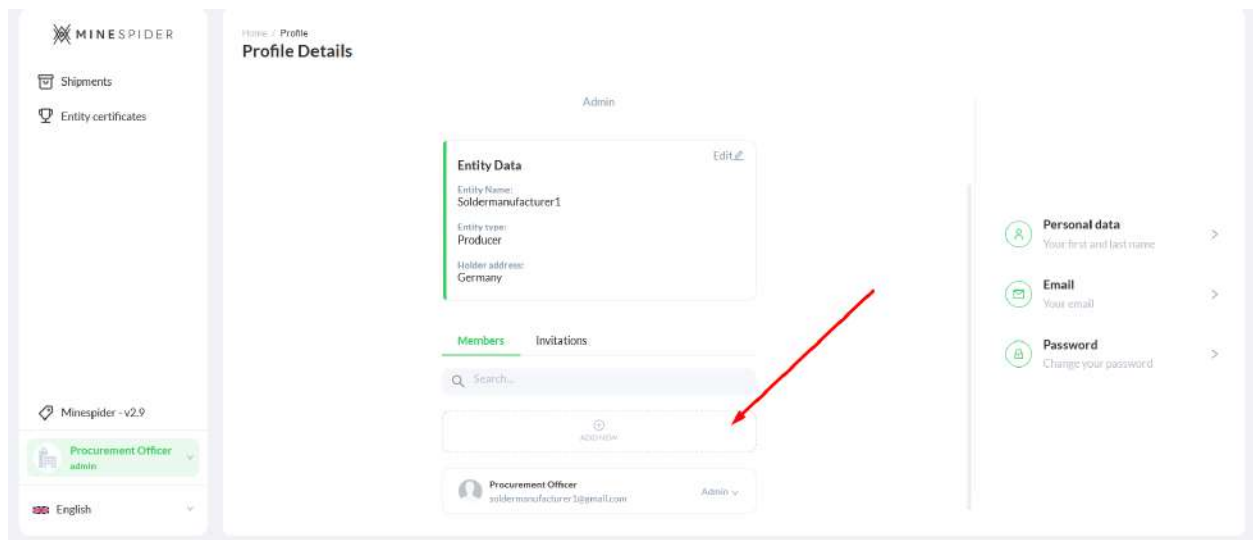


Image 7. Adding new team members

Fill out the information accordingly and send out the invite to the new member (Image 8). If you misspelled a name don't worry, they will also be able to edit their information.

Once you send the invitation, they will receive an email with further instructions. On the same page, you are able to set up admin rights to your members (make your team members admins of the account), remove them if they no longer work with it, and review pending invitations to join.

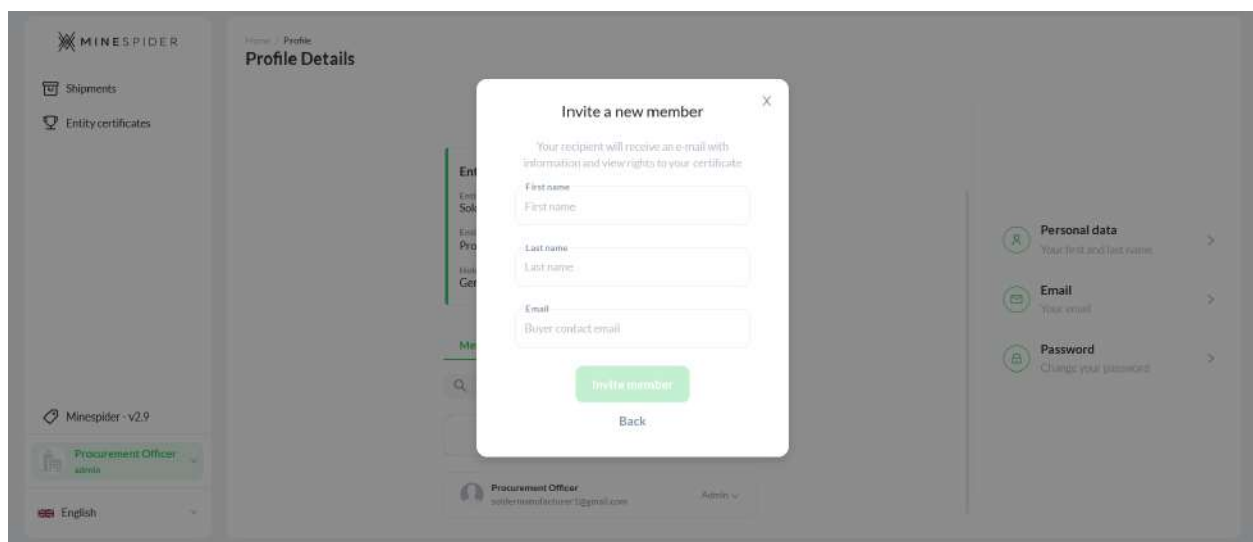


Image 8. Filling data for new team member



Now you are all set up with your account and have defined your team members, we are ready to move forwards and explain the core of the Chain of Custody (CoC) tool. This tool will provide your company with the ability to add shipment information and make it available for traceability purposes. For that reason, we will start with the entity certificates.

5. Entity Certificates

5.1 Creating an entity certificate

Entity certificates contain company level information. You can access them by clicking on **“Entity Certificates”**, located on the left hand menu in the dashboard (Image 9). This information can later be linked to shipment certificates (more about shipment certificates in section 7).

Minespider provides templates that companies can simply fill out and update when necessary, for example after a yearly audit. Minespider also provides templates tailored to some regulations (i.e. the EU Conflict Minerals Regulation) and can add templates for additional regulations, or offer custom templates according to your needs (Image 9).

To access an entity certificate, while on the dashboard, click on **“Entity certificates”**.

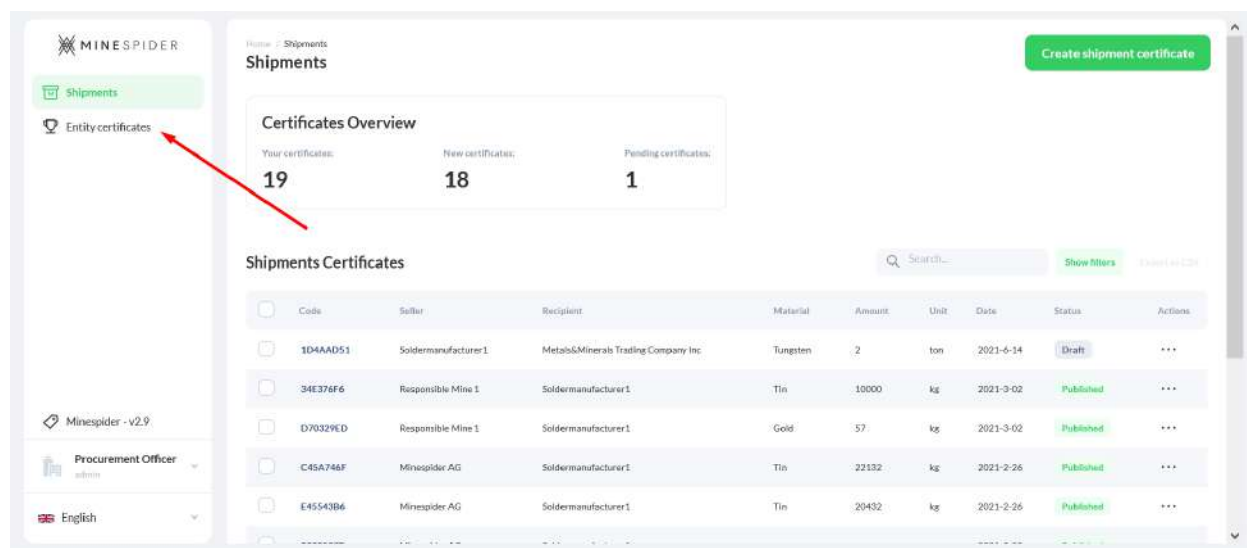


Image 9. Entity Certificates section

There, you will see an overview over your existing entity certificates (in this case OreSource: EU Conflict Minerals Regulation) (Image 10).

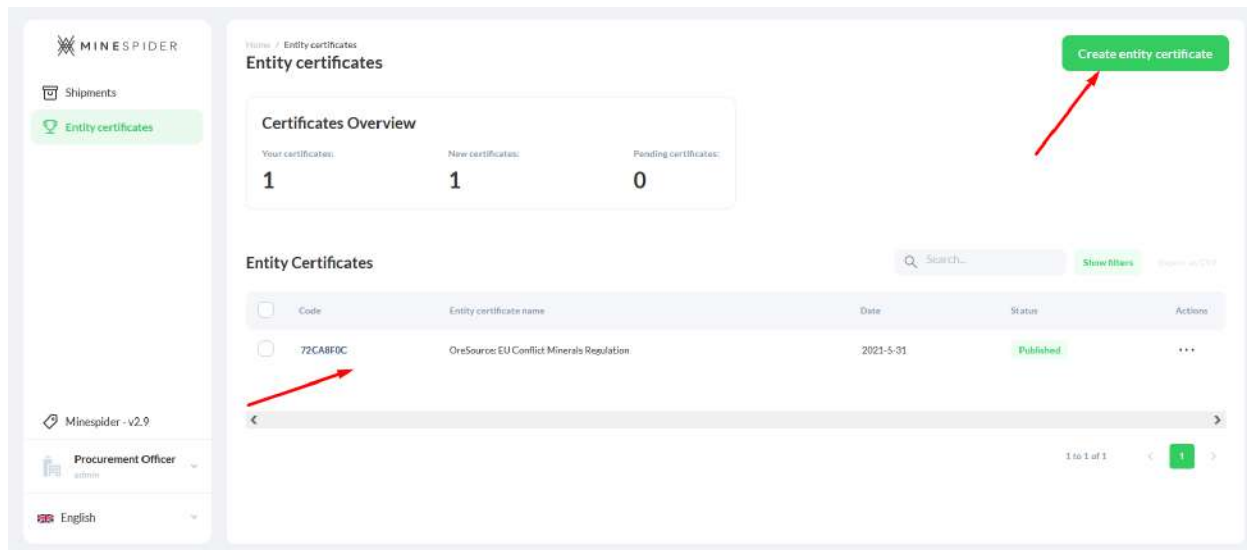


Image 10. Overview of available entity certificates and 'Create Entity Certificate' option

If you simply click on **"Create entity certificate"** in the top right corner, the software will guide you to a three step process as follows:

Step 1: Find your entity certificate

As Image 11 shows after clicking **"Create entity certificate"** you will get an overview of your available entity certificates and a menu where you can select the type of certificate you want to fill in. (Image 10). If you cannot find the template you are looking for, you can request for Minespider to add it (Image 11).

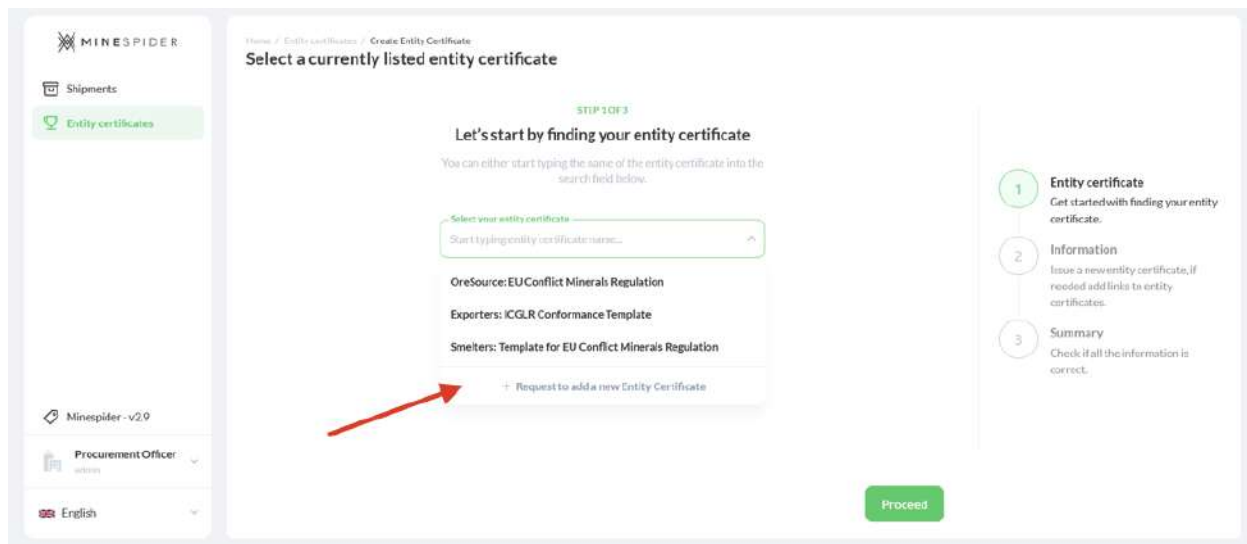
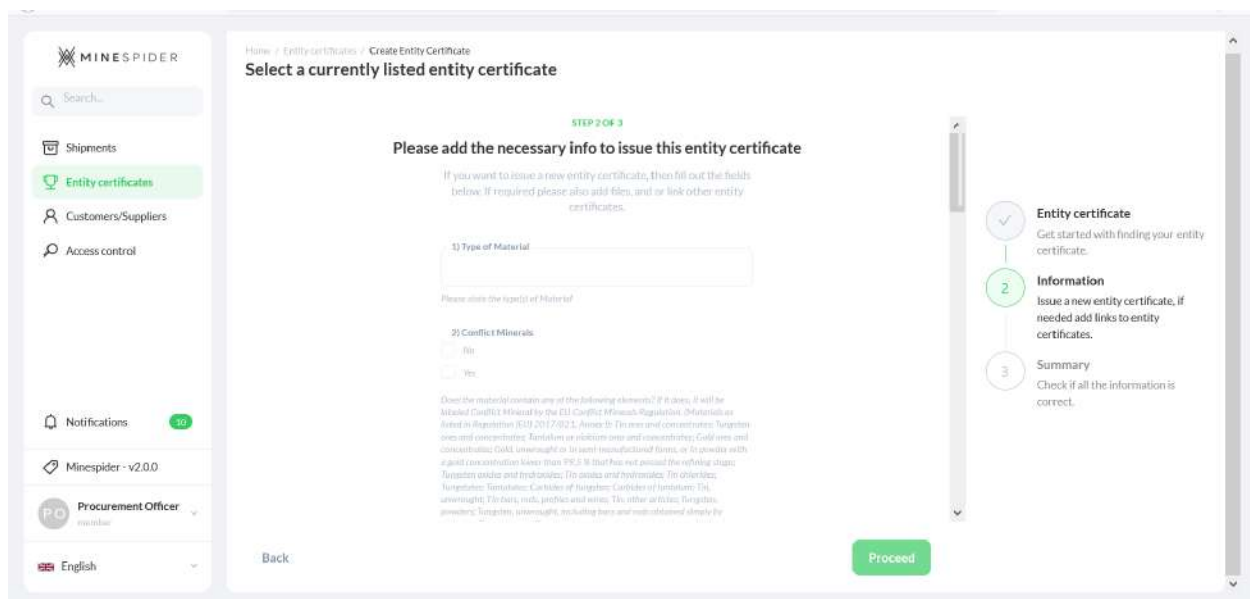


Image 11. Select your entity certificates or request to add new one

When you have selected the entity certificate you want to use, click on **“Proceed”** to move to the next step.

Step 2: Information

Here your entity certificate is available and you can fill out the information you are asked for (Image 12). There is an option to upload supporting documents, for example scans of an audit, or add a label as a short indication of what the template refers to (for ex. Label: EU regulation) when you scroll and try to link it within a certain shipment certificate (more in section 7).



MINESPIDER

Home / Entity certificates / Create Entity Certificate

Select a currently listed entity certificate

STEP 2 OF 3

Please add the necessary info to issue this entity certificate

If you want to issue a new entity certificate, then fill out the fields below. If required please also add files, and/or link other entity certificates.

1) Type of Material

Please state the type(s) of Material

2) Conflict Minerals

☐ No

☐ Yes

Does the material contain any of the following elements? If it does, it will be listed in the EU Conflict Minerals Regulation. Materials as listed in Regulation (EU) 2017/2003, Annex I: Tin ores and concentrates; Tungsten ores and concentrates; Tantalum or columbite ores and concentrates; Gold ores and concentrates; Gold, unwrought or in semi-manufactured forms, or in powder with a gold concentration lower than 99.5 % that has not passed the refining stage; Tungsten oxides and hydroxides; Tin oxides and hydroxides; Tin derivatives; Tantalum; Tantalum; Carbides of tungsten; Carbides of tantalum; Tin, unwrought; Tin ores, concentrates and ores; Tin, other as listed; Tungsten, unwrought; Tungsten, unwrought, including bars and semi-finished shapes by

Entity certificate
Get started with finding your entity certificate.

2 Information
Issue a new entity certificate, if needed add links to entity certificates.

3 Summary
Check if all the information is correct.

Back

Proceed

Image 12. Filling in a selected entity certificate

At the end, you will also be asked whether you want to **“Link another entity certificate”** (Image 13). If, for example, your company went through several audit cycles, after the next audit interval, you create a new certificate with the updated information and link the previous one, so that your customers can see your history of compliance. Once you have done that, all you need to do is click on **“Proceed”** so that you can move to step 3.

(Minerals, Semiconductors, Rare earths, Carbonates of borates, Carbonates of vanadium, Tin, tungsten, Tantalum, Niobium, antimony and niobium, Tin, other vanadium, Tungsten, vanadium, Tungsten, vanadium, including boron and vanadium, obtained simply by mining, Tungsten, Niobium, Tungsten, boron and vanadium, other than those obtained simply by mining, antimony, antimony, antimony, antimony and tin, and other, Vanadium, vanadium, including boron and vanadium, obtained simply by mining, vanadium, Vanadium, boron and vanadium, other than those obtained simply by mining, antimony, antimony, antimony, antimony and tin, and other.

4) RMSP confirmation Public

☒ Please check if the supplier meets the RMSP process and fraud confirmation?

5.1) Reporting requirements Public

☒ Do the supplier published a report on the independent third party with its accordance with Step 5 of the OECD Due Diligence Guidance?

6) Responsible sourcing without assurance mechanism Public

☐ If none of the above apply, please check if the supplier has gone through an independent third party assessment to confirm compliance with the OECD Due Diligence Guidance?

4.1) Date of validity of RMSP confirmation Public

2023-10-14

If yes, and if when is the supplier's last RMSP audit valid? Please state the date of expiry of the current confirmation date.

Upload files

Drag or click to upload files
These files would be included in your alignment certificate.

Labels
Add labels to be included in your certificate

Labels
Type here

[Link entity certificate](#)

[Back](#) [Proceed](#)

- 1 Entity certificate
Get started with finding your entity certificate.
- 2 **Information**
Issue a new entity certificate, if needed add links to entity certificates.
- 3 Summary
Check if all the information is correct.

Image 13. Adding files, labels or linking other entity certificates

Step 3: Summary

Step 3 provides a summary of all the information that needs to be confirmed so that the entity certificate can be published (Image 14). Once you click **“Publish”** you have successfully completed the process of filling an Entity certificate and you can use it in your future shipment activities.

Home / Entity certificates / Create Entity Certificate
Select a currently listed entity certificate

The date of expiry of the current conformance letter:
2023-10-14

What is the end date of the most recent audit? If the member is adherent to additional responsible sourcing standards, please list them (date of validity):
2021-10-05

☒ Has the member published a report on the independent third party audit in accordance with Step 5 of the OECD Due Diligence Guidance?

Issuer & Certifier

Issuer & Certifier Information

Self-certified [Compare](#)

External certifiers can be Added to The Access Control

Minespider AG [View](#)

Address:
Dumervy 16, 6306, Zug, Switzerland

Transparency Layer

Transparency details

Please state the type(s) of Material:
Tantalum

In which member was this alignment processed? Please state the complete name of member:
Mandanda

Please state the member's CID number as listed in the IRI data base:
123456

Where is this member located? Please state the country and province of the member:
Slopp

Please list the country or countries of origin of the member's input materials:
Rwanda

Please name the responsible sourcing standard. If the member is adherent to additional responsible sourcing standards, please list them:
R9

What is the member or certification ID number? If the member is adherent to additional responsible sourcing standards, please list their respective ID numbers:
123

☒ I agree with Minespider's Terms of Use and Privacy Policy and that the information can be shared and published in accordance with the assigned category of publication.

[Back](#)

[Publish certificate](#)

Entity certificate
Get started with finding your entity certificate.

Information
Have a new entity certificate, if needed add links to entity certificates.

Summary
Check if all the information is correct.

Image 14. Confirming the data and publishing entity certificate

5.2 Entity dashboard

For a detailed overview of all your entity certificates, you can click on the **“Entity Certificate”** line on the left hand menu. To open one of them, you can either click on the **three dots (...)** located on the right hand side of the dashboard under **“Actions”** or you can click on the **“Code”** numbers located on the left hand side of the entity dashboard (Image 15).

Entity certificates

Create entity certificate

Certificates Overview

New certificates

842

New certificates

701

Pending certificates

141

Entity Certificates

Search

Show filters



Export to CSV

<input type="checkbox"/>	Code	Entity certificate name	Date	Status	Labels	Actions
<input type="checkbox"/>	D4284E62	Sanctions Template for EU Conflict Minerals Regulation	2023-03-14	Published		...
<input type="checkbox"/>	393A29E3	Sanctions Template for EU Conflict Minerals Regulation	2021-09-09	Draft		<div>Detailed view</div> <div>Edit</div>
<input type="checkbox"/>	0X960E07	SMP 3	2021-09-07	Draft		...
<input type="checkbox"/>	A7C28A32	August test template	2022-0-16	Draft		...
<input type="checkbox"/>	41247392	August test template	2022-0-15	Draft	template	...
<input type="checkbox"/>	0F84F326	Kata - Test Template 123	2021-0-15	Draft	template	...
<input type="checkbox"/>	54841365	August test template	2022-0-20	Draft		...
<input type="checkbox"/>	029E1434	August test template	2022-0-20	Draft		...
<input type="checkbox"/>	46A20468	August test template	2022-0-20	Draft		...
<input type="checkbox"/>	47E70A16	August test template	2022-0-20	Draft		...

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1
2
3
4
5
...
85
>

Image 15. Opening an entity certificate from the dashboard

In the event you realise there has been an error or a typo within the certificate, you can rectify this by editing the certificates either through the dashboard by clicking on the three dots (Image 15) or if you have the certificate opened, just click the **“Edit a certificate”** button (Image 16) and follow the steps (same three steps as with creating a certificate) to adjust your certificate details and publish it again.


Smelters: Template for EU Conflict Minerals Regulation


Company: Minespider AG
 Date: 2021-10-14


☒ Please check if any of those countries considered a Conflict Affected or High Risk Area? Please note that there is no definitive list of CAHRAs. The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (Third Edition) defines them as follows: "Conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks of harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars, etc. High-risk areas may include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence. Such areas are often characterised by widespread human rights abuses and violations of national or international law."

☒ Please check if the smelter participating in the RMAP process and found conformant?

If yes, until when is the smelter's last RMAP audit valid? Please state the date of expiry of the current conformance letter:
 2023-10-14


What is the end date of the most recent audit? If the smelter is adherent to additional responsible sourcing standards, please list their dates of validity:
 2023-10-05

☒ Has the smelter published a report on the independent third party audit in accordance with Step 5 of the OECD Due Diligence Guidance?




Issuer & Certifier

Issuer & Certifier information

Self-certified 

External certifiers can Be Added In The Access Control

Minespider AG 

Address:
 Dammstr 14, 6300, Zug, Switzerland

Image 16. Editing data on the entity certificate

Sometimes, there is a need to export certificates into other formats so they can be implemented as part of other solutions or surveys. Within the Minespider app you have the option to select your entity certificate(s) of interest and export them as .csv files (Image 17).

Certificates Overview

Your certificates:

842

New certificates:

701

Pending certificates:

141
Entity Certificates

[Show filters](#)
[Export as CSV](#)

<input type="checkbox"/>	Code	Entity certificate name	Date	Status	Labels	Actions
	D42B4E62	Smelters: Template for EU Conflict Minerals Regulation	2021-10-14	Published		...
	595ACFE3	Smelters: Template for EU Conflict Minerals Regulation	2021-10-09	Draft		...
	D09BDED7	SAF 3	2021-10-07	Draft		...
<input type="checkbox"/>	67C226A2	August test template	2021-9-16	Draft		...
<input type="checkbox"/>	41247692	August test template	2021-9-15	Draft	reception	...
<input type="checkbox"/>	EFB4F328	Kate - Test Template 123	2021-9-15	Draft	Description	...
<input type="checkbox"/>	14841263	August test template	2021-8-20	Draft		...
<input type="checkbox"/>	029E1434	August test template	2021-8-20	Draft		...
<input type="checkbox"/>	4EASE4E8	August test template	2021-8-20	Draft		...
<input type="checkbox"/>	47EFAB18	August test template	2021-8-20	Draft		...

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Image 17. Exporting entity certificates as .csv files

6. Inviting customers

You can invite customers to join the Minespider app, to receive and send information. This comes initially at no fee, since with your invitation they will receive a free account that allows their company to send and receive data. If a company wants to make use of additional tools and templates, they can upgrade to a paid subscription at any time.

Regardless of whether a company accepts the invitation or not, you will be able to create the certificate with them as a recipient and send the shipment to them. If your customer decides not to act on it, as long as the QR Code remains on the shipment, the next company in the supply chain will still be able to scan the QR Code and trace it back to you, thus ensuring proof of provenance. Here's how you do it:

On your dashboard, click on ***"Create shipment certificate"*** (Image 18).

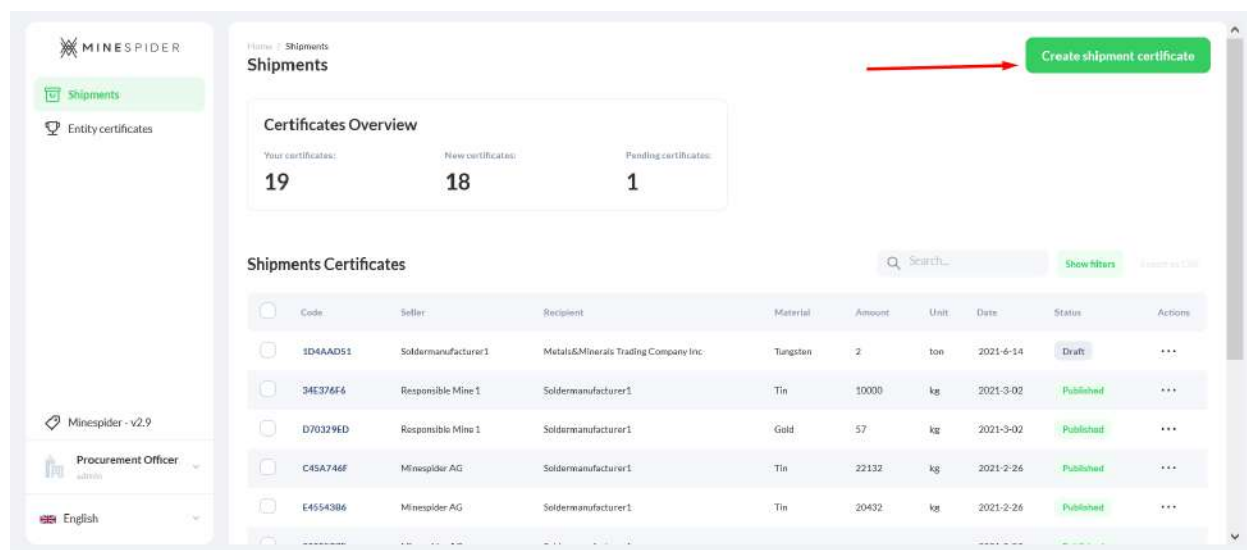


Image 18. Create your shipment certificate

Next, you get to select the recipient of the certificate. Here, you can click on ***"Add new recipient"*** as indicated on Image 19.

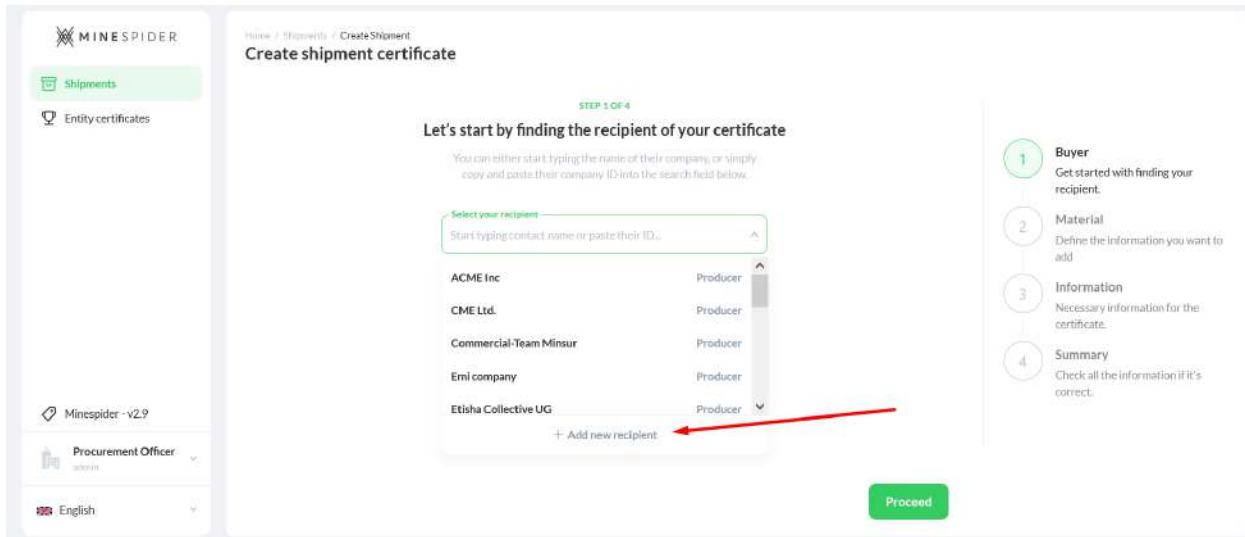


Image 19. Add new recipient

You will be asked to fill out the details of the company and your contact there. Afterwards, you click **“Invite recipient”** and an email with further instructions will be sent to the recipient (Image 20).

Please note that the recipient of this invitation will be able to edit their personal information, and the information about the company (Image 20). Also, the recipient will be able to add further team members (See Section 4 in this user guide on how to do that for your account).

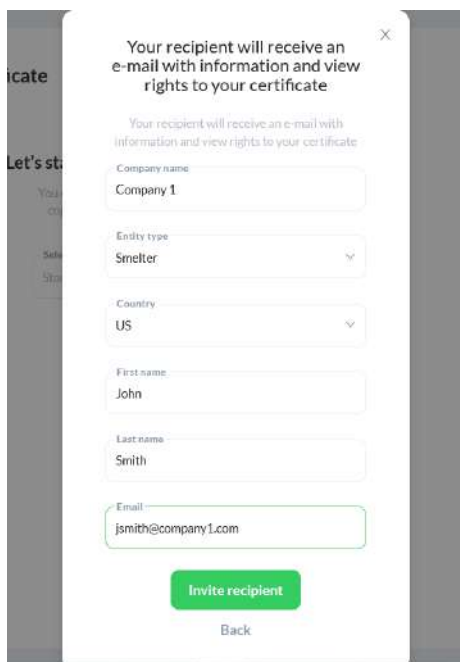


Image 20. Invite recipient details

After you send out the invitation, you can either go ahead and create the first shipment certificate you want to send to this company, or you can just go back. After the invitation has been sent successfully, the company will appear in your list of recipients.

7. Shipment certificates

7.1 The Shipment Dashboard

Sending and receiving shipment certificates is at the core of Minespider's app. It allows you to push data down the supply chain, or pull it from your suppliers. You will find a list of all the shipment certificates on the dashboard, the page you land on when you log in to your account.

It gives an initial overview of all the shipments and some of it's more crucial details such as:

- Code
- Seller
- Recipient
- Material
- Amount
- Unit
- Date
- Status
- Labels
- Actions

Besides this overview, it also provides the ability to **search** through your certificates with the search bar on top and **filter** them along several criteria - you can even look for the metadata that you saved with them as well as **export** any or multiple shipment certificates (by selecting it/them - in case required) as a .csv file. (Image 21).

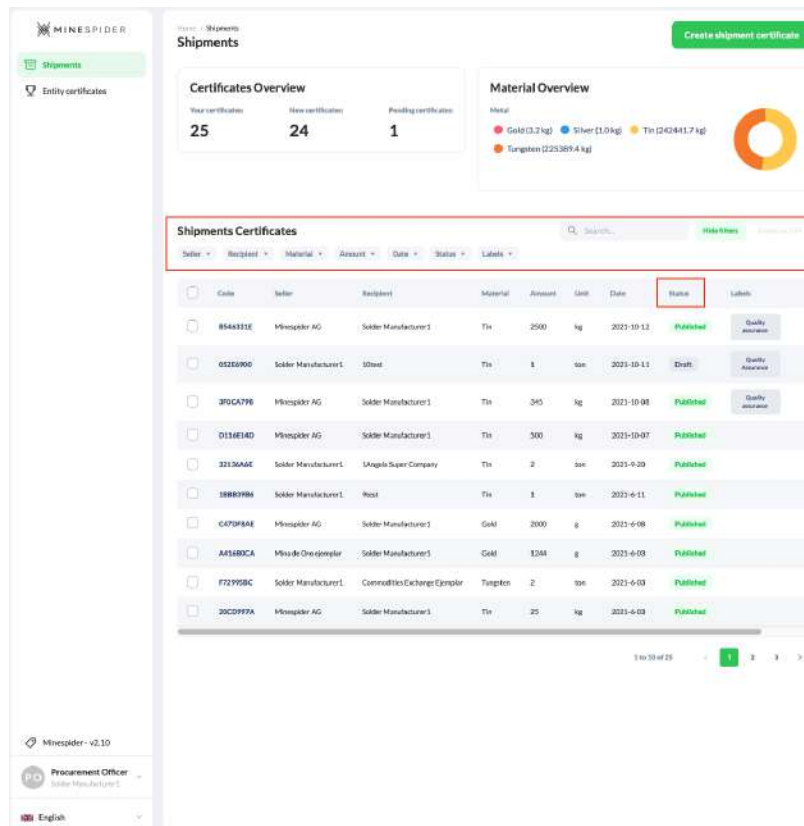


Image 21. Search through shipment certificates

While on the dashboard you will notice the “**Status**” line. A shipment certificate can have one of three statuses:

- **Draft:** The certificate is in draft stage and has not been finalized yet. It can be opened at any time and finished.
- **Ready:** The certificate has been finalized - it is not linked to the blockchain yet. This can take a few moments to happen.
- **Published:** The certificate has been finalized and linked to the blockchain.

7.2 Creating a shipment certificate

Once you have your material ready and you want to ship it out, then you can proceed and create a shipment certificate within the Minespider app by clicking the “**Create Shipment Certificate**” button at the top right corner of the dashboard (Image 22). This will guide you through four steps with the aim to add all data relating to a shipment.

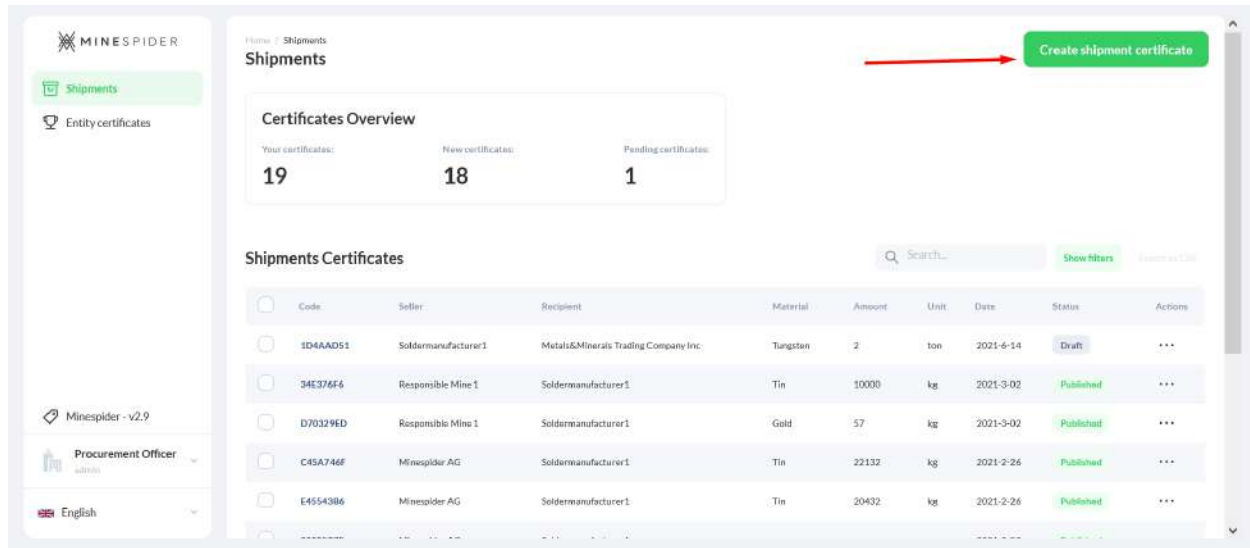


Image 22. Create shipment certificate

Step 1: Select the recipient

If you're shipping to a customer who has not yet signed up with Minespider, you can invite them via **"Add new recipient"**. For a step-by-step instruction on this, please see above, in Section 6. You can also create a certificate by uploading a .CSV file. We will cover that further down in a separate Section. When you've added the recipient, click on **"Proceed"** to start with the next step (Image 23).

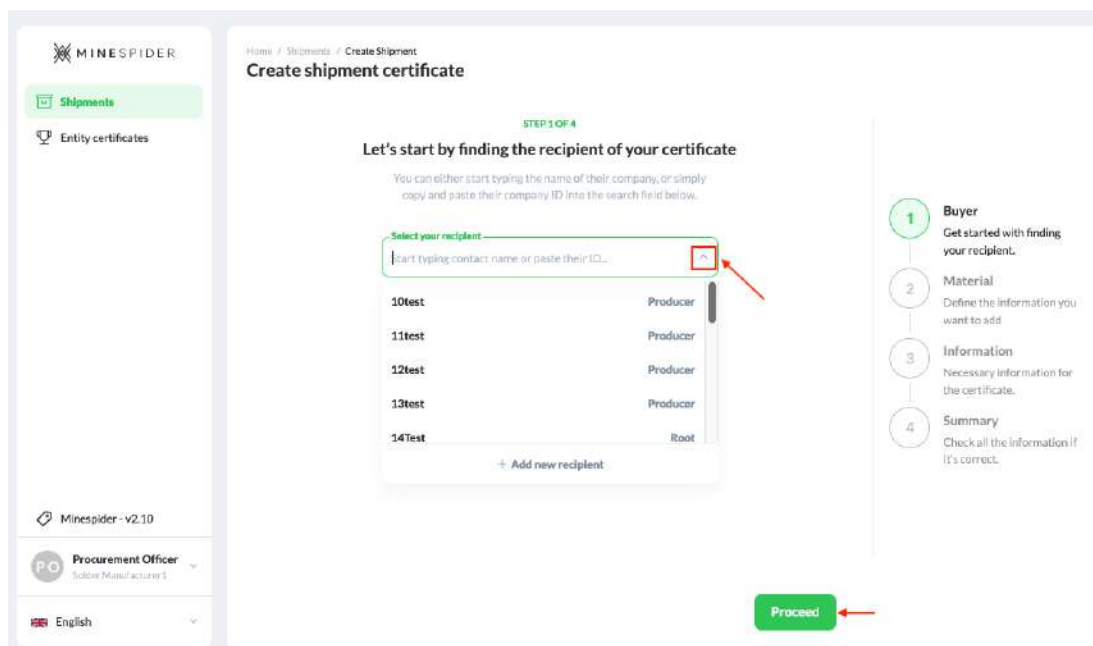
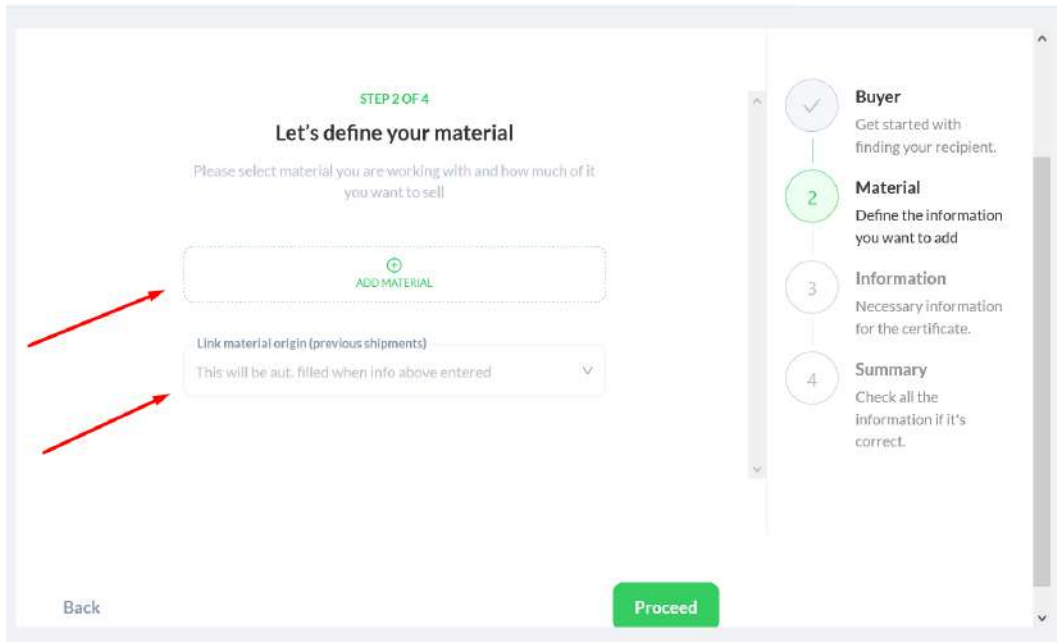


Image 23. Step 1: Finding the recipient of the shipment certificate

Step 2: Add material

Select the material by clicking on the **“Add material”** button. If you have shipment certificates for the origin of the materials, you can link them here (Image 24). If you link them, the transparency layer will become visible to the recipient of your customer, and you will maintain the transparency of the supply chain and the material’s provenance.



STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

ADD MATERIAL

Link material origin (previous shipments)
This will be aut. filled when info above entered

Back Proceed

Buyer
Get started with finding your recipient.

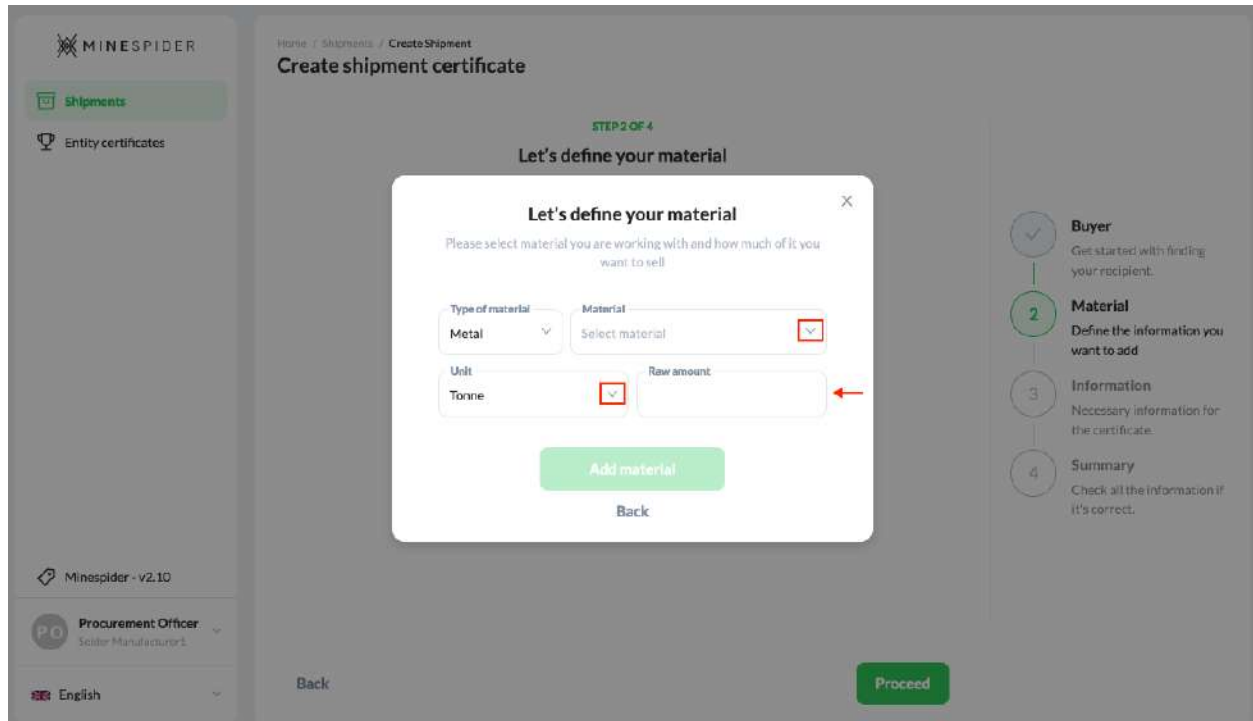
2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 24. Step 2: Adding material and linking material origin

When you click on **“Add material”**, you’ll be able to specify the **type of material**, **unit** and the **amount** (Image 25). In the event you want to state a metal or ore that is not listed, you can also add your own custom material. To do that, just start typing the material name you want to add in the **“Select material”** box and then once you have done that click on the **“+ Add Custom material”** button” (image 26).



MINESPIDER

Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material: Metal

Material: Select material

Unit: Tonne

Raw amount:

Add material

Back

Buyer: Get started with finding your recipient.

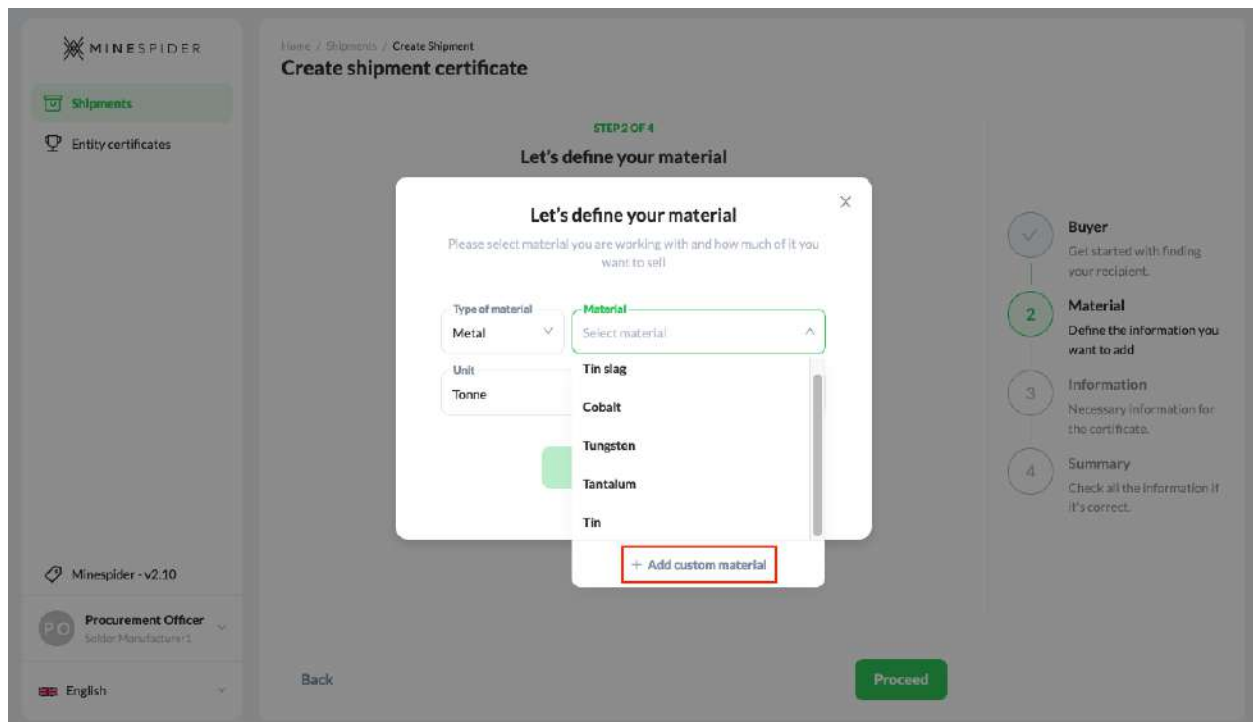
2 Material: Define the information you want to add

Information: Necessary information for the certificate.

Summary: Check all the information if it's correct.

Back Proceed

Image 25. Step 2: Adding material



MINESPIDER

Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material: Metal

Material: Select material

Unit: Tonne

Raw amount:

Add material

Back

Buyer: Get started with finding your recipient.

2 Material: Define the information you want to add

Information: Necessary information for the certificate.

Summary: Check all the information if it's correct.

Back Proceed

Image 26. Step 2: Adding custom material category

Under **“Link material origin (previous shipments)”**, you can filter your shipments to identify the correct ones and link them by clicking on the checkbox (Note: you can link more than one shipment). You can also link different materials if what you are shipping is, for instance, an alloy (Image 27).

Home / Shipments / Create Shipment

Create shipment certificate

Link previous Shipments

Seller


Recipient

Material

Amount

Date

Type here for filtering

 Minespider AG


6B841B1D

Date: 2021-10-08

Buyer: Soldermanufacturer1

Materials: Tin 2200 kg

Show more details

 Responsible CAHRA mine

B6FB444E

Date: 2021-8-13

Buyer: Soldermanufacturer1

Materials: Tin 1 kg

Back

Link

1 Buyer

Get started with finding your recipient.

2 Material

Define the information you want to add

3 Information

Necessary information for the certificate.

4 Summary

Check all the information if it's correct.

Image 27. Step 2: Linking previous shipments

Step 3: Information

This is the more detailed step where you can add details that distinguish your shipment, indicate material origin or chain of custody. Some of the details you can include are shown in Image 28.

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files.

These files would be included in your shipment certificate.

Labels

Add labels to be included in your certificate

Label

Type here v

Further Information

Add information to be included in your certificate

+ Add information

📍 Location

+ Link entity certificate

Image 28. Step 3: Adding data for your shipment

We will present a full breakdown on each of these in the next few pages.

- Uploading files

This section is very useful for sharing any files relating to your activities that you want to make available to your recipient or supply chain participants. For instance, that could include a lab analysis document, supply chain policies, transport confirmations, invoicing or any other type of document based on the company needs. For each file you can select individually which layer you want it to go into, as indicated in Image 29.

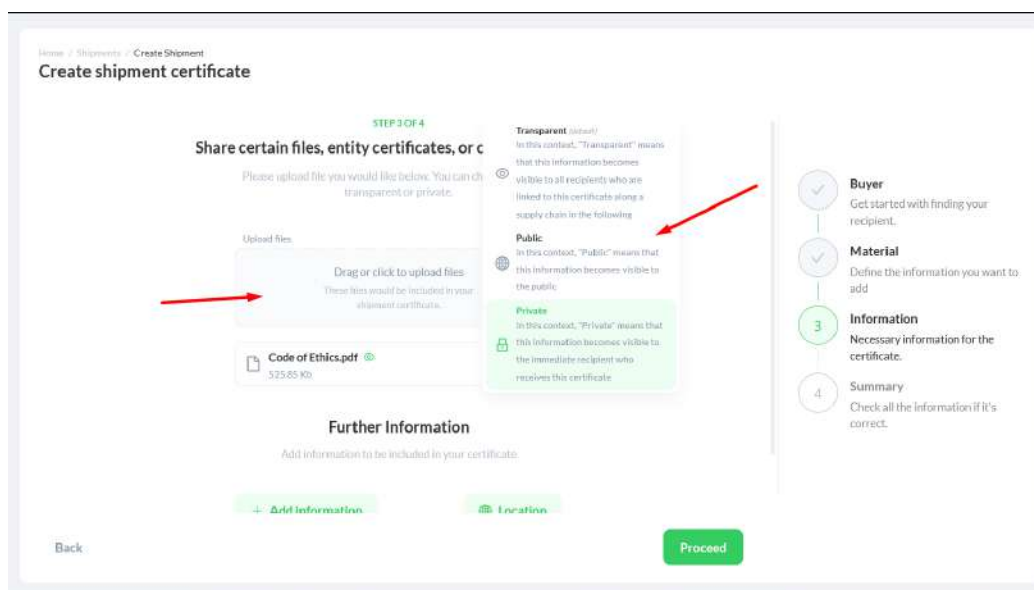


Image 29. Step 3: Adding files related to your shipment

○ Adding labels

You can assign labels to a shipment certificate. They are very helpful in identifying the stage from which your material is being sent. For instance, imagine a material goes through several stages within one company and all those steps are documented on Minespider. Instead of setting up several accounts, now you can work with just one, create a shipment certificate, and send it internally, while using a label to identify the current stage.

To illustrate it better, in the event of ore being delivered to a smelter, it will be sampled, crushed, stored, and eventually smelted and refined. During this process, additional information will have to be added (e.g. lab reports, lot numbers, batch numbers, etc.) by different employees and departments. By putting a label on a certificate, it is clear at what stage it currently is and how it moves throughout the internal process.

As opposed to having a draft that everybody can add to until it is finished, this approach enables you to have a clear history of how long material was in a certain stage, and who added which document and when. Another example would be if you find there is an error with certain material (e.g. the purity your lab identified doesn't match the purity your supplier reported). In this scenario, you can label the certificate accordingly to make sure it is not used and processed until the issue is resolved.

You can simply add a label by typing in the name you would like to give it. Once you have typed it in, it will be saved for later use (Image 30).

Create shipment certificate

Labels

Add labels to be included in your certificate

Label

Quality Assurance



Quality Assurance

Further Information

Add information to be included in your certificate

[+ Add information](#)

[Location](#)

[Back](#)

[Proceed](#)

Image 30. Step 3: Adding labels

On the dashboard, the labels will be shown with the certificates at the very right, next to their status (Image 31).

Shipments Certificates

[Search...](#)

[Show filters](#)

[Export as CSV](#)

<input type="checkbox"/>	Code	Seller	Recipient	Material	Amount	Unit	Date	Status	Labels
<input type="checkbox"/>	052E6900	Solder Manufacturer1	10test	Tin	1	ton	2021-10-11	Draft	Quality Assurance
<input type="checkbox"/>	FCE57874	Good Smelter	Solder Manufacturer1	Tungsten	122	ton	2021-10-11	Published	
<input type="checkbox"/>	3F0CA798	Minespider AG	Solder Manufacturer1	Tin	345	kg	2021-10-08	Published	Quality assurance
<input type="checkbox"/>	D116E14D	Minespider AG	Solder Manufacturer1	Tin	500	kg	2021-10-07	Published	

Image 31. Labels overview on the Shipment Dashboard

- Add Information (metadata)

Within the Minespider app we have the option to include additional data, as this sometimes comes as a requirement. In this section, information such as transport details, specific type of material or a note we want to leave for the recipient can be added. You can choose how that information can be shared by selecting whether that file should be public, transparent or private in Minespider's layers system (Image 32).

If you are using your phone and the mobile web version, you can use your webcam to add tag details for your bags by using the barcode scanner, which prefills the tag numbers within these fields.

When adding any additional data you can choose the data layer individually. Please note that there is no need to confirm the entry. A useful hint here: If you put the metadata on the public layer, it will appear along with the material - so you can use this feature to add what you want everyone to see right away on the public layer (e.g. metal content, "Handle With Care", or other alerts).

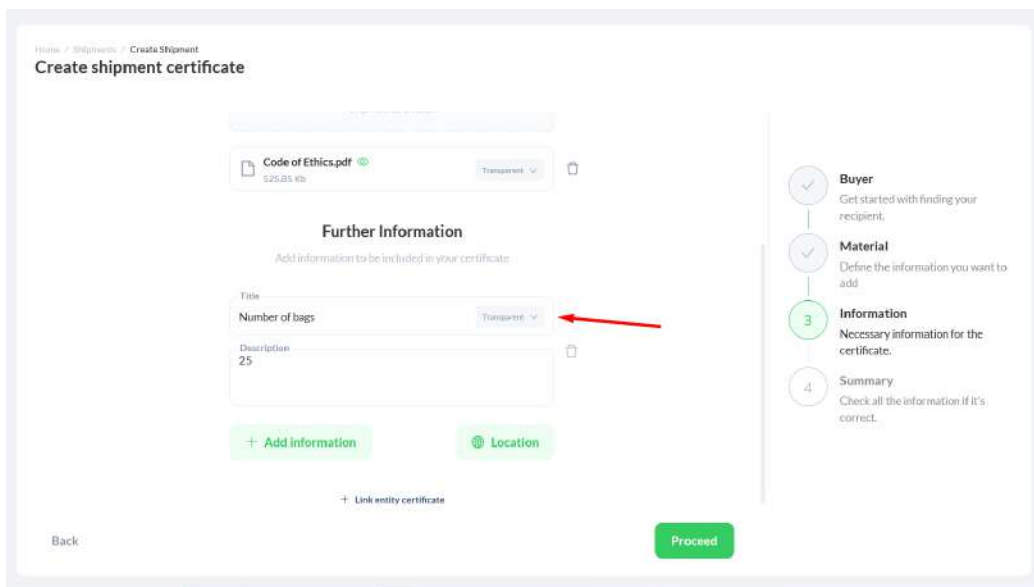


Image 32. Step 3: Add information

- Scanning barcodes (mobile version only)

If you are using Minespider's mobile version from your smartphone, you are also able to scan barcodes and thereby capture the associated information as metadata. In order for this feature to work you have to enable access to your phone's camera, when prompted to do so. Once you point your camera to a barcode it automatically prefills the data in the **"Add Information"** field as shown on Image 33. If your barcode is indicating a tag number that will go to a bag, you can add the bag weight manually by adding the details in the box. Repeat the same step if there are multiple tags you would like to scan.

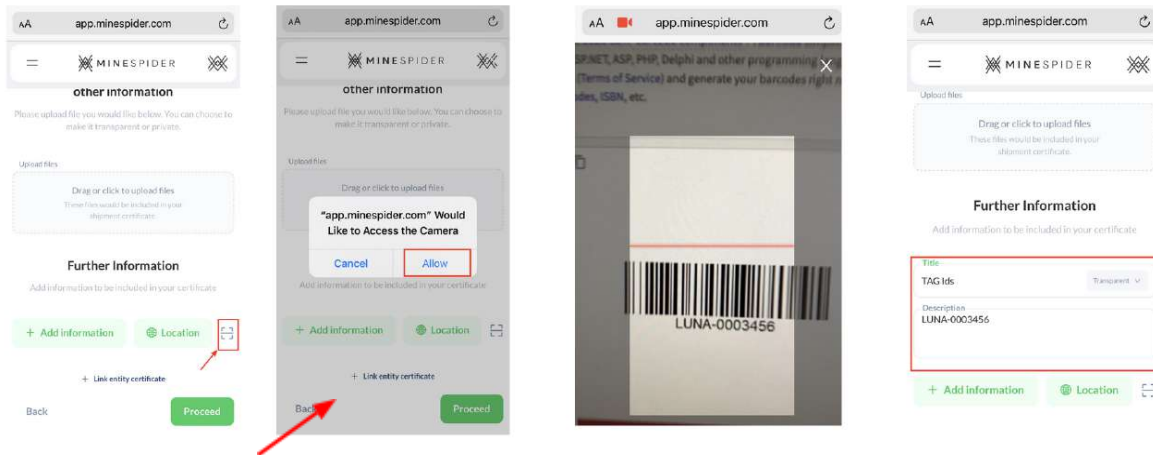


Image 33. Step 3: Using the barcode reader (mobile web version)

- Adding the GPS Location

Adding the GPS location is another key feature for chain of custody along supply chains. By clicking on the **“Location”** button and approving access, you can have your geographic coordinates (current location) added to the shipment certificate. This is useful, for example, if you are working on a mine site or located in a smelter (Image 34 and 35).

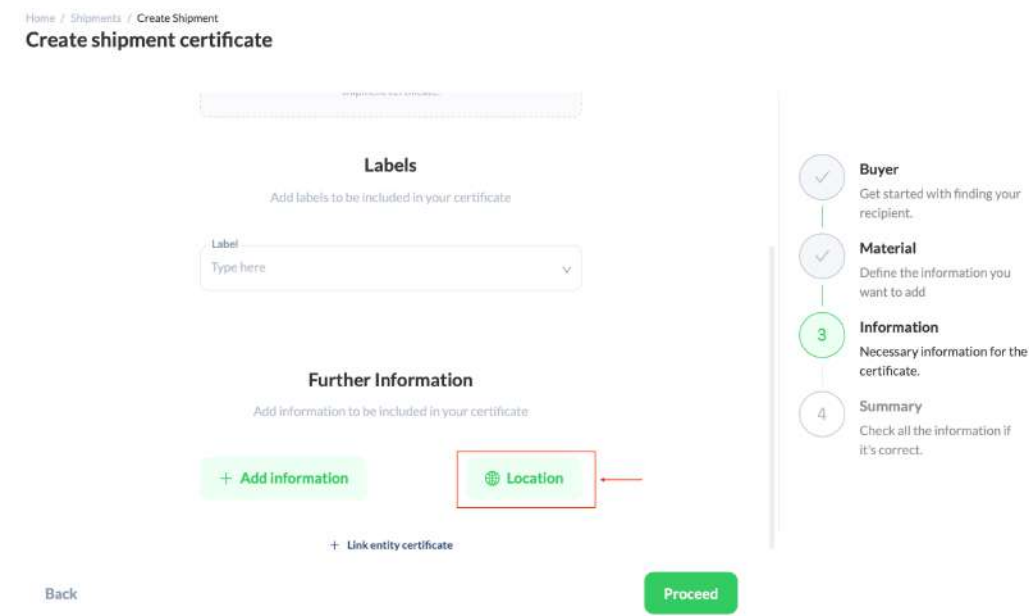


Image 34. Step 3: Adding GPS location

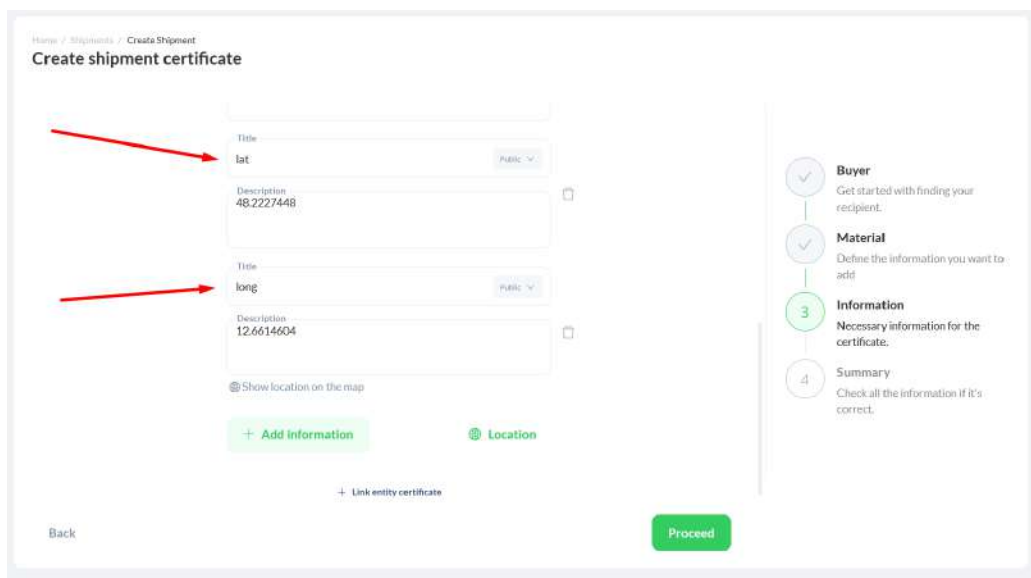
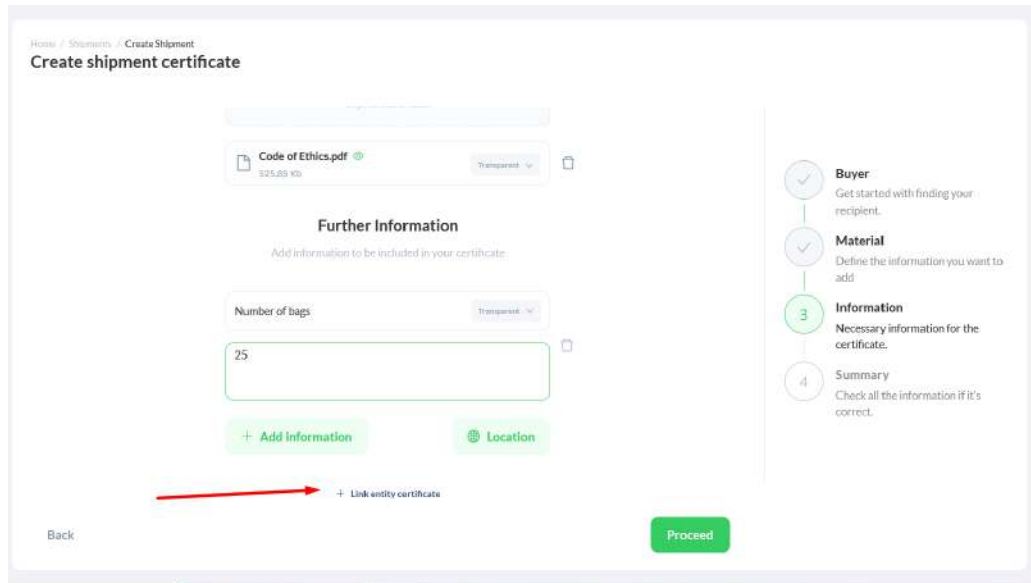


Image 35. Step 3: GPS location

○ Linking Entity Certificates

Lastly, you can link an entity certificate. This is company level information that was filled out by you or your colleagues before, and can now be added to each shipment certificate. For more information on entity certificates please see Section 5. To add that, simply click on **“Link entity certificate”** and you will be able to search a list of your entity certificates, or enter the name of the entity certificate (Image 36 and 37).

You can also review more information on the certificates before you add them. (Note: you can link more than one entity certificate, if necessary. Just tick the box to the right of the certificate you would like to add).



Home / Shipments / Create Shipment

Create shipment certificate

Code of Ethics.pdf 325.85 Kb Transparent

Further Information

Add information to be included in your certificate

Number of bags: 25

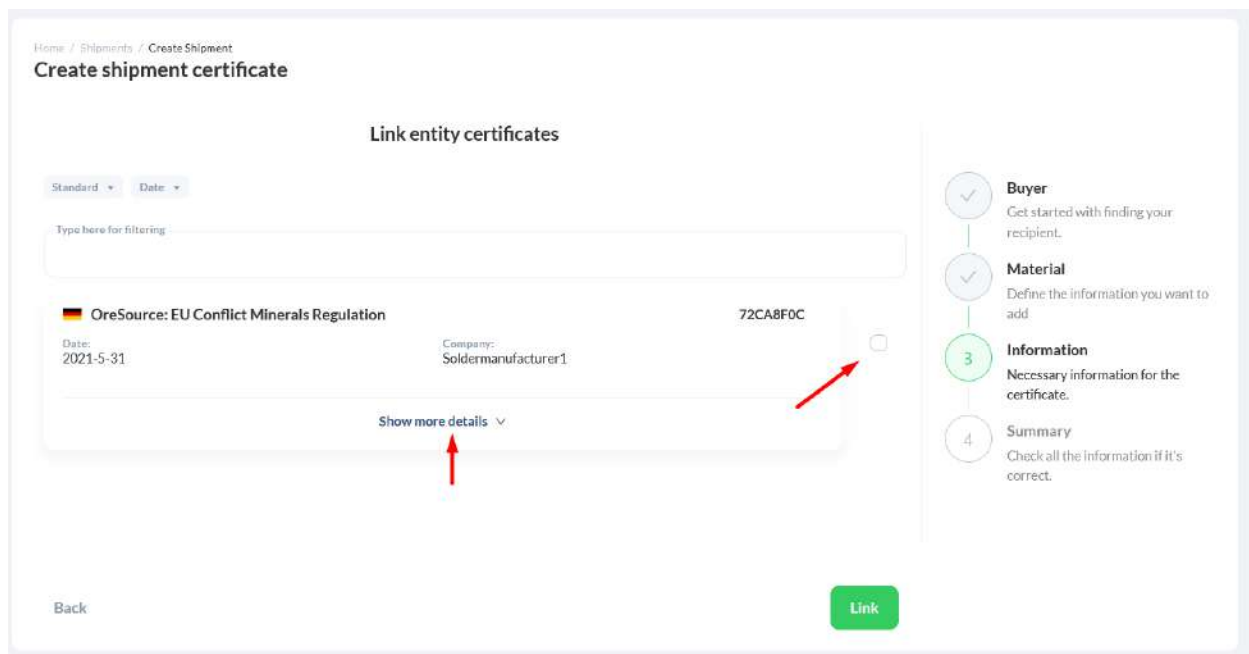
+ Add Information Location

+ Link entity certificate

Back Proceed

- ✓ Buyer: Get started with finding your recipient.
- ✓ Material: Define the information you want to add.
- 3 Information: Necessary information for the certificate.
- 4 Summary: Check all the information if it's correct.

Image 36. Step 3: Linking Entity Certificate



Home / Shipments / Create Shipment

Create shipment certificate

Link entity certificates

Standard Date

Type here for filtering

Germany OreSource: EU Conflict Minerals Regulation 72CA8F0C

Date: 2021-5-31 Company: Soldermanufacturer1

Show more details

Back Link

- ✓ Buyer: Get started with finding your recipient.
- ✓ Material: Define the information you want to add.
- 3 Information: Necessary information for the certificate.
- 4 Summary: Check all the information if it's correct.

Image 37. Step 3: Available entity certificates

Once you have finalised this, you can click on **“Proceed”**

Step 4: Summary


Here you will see an overview of all the information that was added so far. If you would like to make any changes or you realised you have missed something, you can go **“Back”** and do so. When you’re happy with all the information you added, go ahead to accept the **“Terms and conditions”**, by checking the box next to it and click on **“Publish certificate”** (Image 38). Afterwards, the app will take you back to the shipment dashboard, where you can see the certificate listed as first on the dashboard with all details corresponding to that shipment (Sender; Recipient; Material; Amount; Unit; Date; Status; Labels) and as explained in Section 7.2.

STEP 4/4

Please review your certificate details below

If all is correct, feel free to finalise the creation of your new certificate. If you would like to make amendments, click back to make changes.

Quality assurance



Date

2021-11-08

Material:

Tin (678 kg)

Tin - 678 (kg)

Owner

Minespider AG

See more

Linked shipments

Minespider AG

Buyer: Minespider AG

Material: Tin (100kg)

Material to name: Tin (100kg)

IVA Ltd.

Buyer: Minespider AG

Material: Tin (1 kg)

Material to name: Tin (1kg)

Sender & Buyer information

Minespider AG

Address: Damenstr 16, 6300 Zug, Switzerland

15Test

Address: Andorra

Transparency Layer

Transparency details

531x38x41

Tin (100kg)

33681667

Tin (1kg)

Number of bags

25

TAG ID:

LLUNA-0003456

File attached

Codo of Ethics.pdf

7.34 KB

☒

I agree with Minespider's Terms of Use and Privacy Policy and that the information can be shared and published in accordance with the assigned category of publication.

Publish certificate

Buyer

Get started with finding your recipient.

Material

Define the information you want to add.

Information

Necessary information for the certificate.

Summary

Check all the information if it's correct.

Image 38. Overview of created certificate on the shipment dashboard

7.3 Create a shipment certificate via CSV file upload

Especially in the context of Artisanal and Small-Scale Mining (ASM) Operations, there is often a lack of access to the internet. At the same time it is important to capture data onsite and be able to feed it into the Minespider app directly - writing it up somewhere and then copy-pasting would take time and open additional room for human error.

So as an alternative approach, Minespider offers you the possibility to upload CSV files and directly create shipment certificates from them. What is more, you don't even have to work with Excel but you can use the tool [Kobotoolbox](#), which offers powerful data collection tools. Templates can be filled out offline and, when there is internet access again, subsequently exported as CSV files.

If you are interested in using this feature, please get in touch with your Minespider representative. We will set you up with a CSV template according to your specific needs and explain in more detail how to fill that out. When everything is ready, you can go ahead and start collecting data offline. Then, you can simply upload the CSV file to create a shipment certificate. Note: if you want to cover several shipments (for example, if you do your weekly visit to a collection site and register all the ore that was delivered by miners in the past seven days) you can create all necessary shipment certificates through one document.

Here is how that works (Image 39).

Create shipment certificate

STEP 1 OF 4

Let's start by finding the recipient of your certificate

You can either start typing the name of their company, or simply copy and paste their company ID into the search field below.

Select your recipient

Start typing contact name or paste their ID...



or

Upload csv or excel certificates

Drag or click to upload files

These files would be included in your shipment certificate.

Proceed

Image 39. Adding/uploading a CSV file

Troubleshooting: Please note that if you haven't completely filled out the CSV file in a way that mandatory information such as Recipient; Type of Material; Material; Unit and Raw Amount are not filled in, the app will notify you that the certificates are not successfully created.

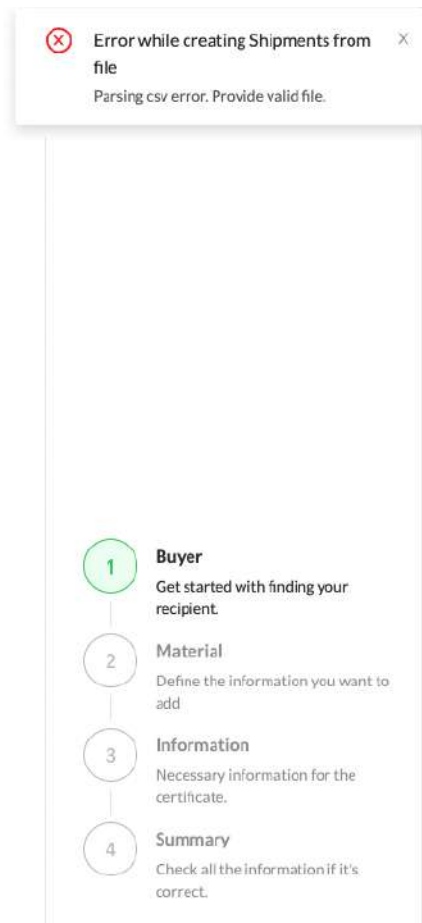


Image 40. Error message for incomplete CSV file

In this example, there are several reasons why the certificates were not created:

- The Recipient was not added in the form (see entries at the bottom).
- Some information is always required in order to create a certificate: a recipient, the type of material, material, unit and the amount has always to be entered.
- If other fields remain empty, this information can be added later, and the created certificate will be saved as draft.

Once a CSV file is successfully uploaded, containing the mandatory fields, the certificates are shown in draft format on the dashboard. In the example below (Image 41), there are several shipments of coltan ore and tantalum concentrate created from one CSV file. In all of them certain information is missing, but can be added now, after the upload. Apart from the aforementioned data points, it is entirely up to the user to define what information would be asked for.

Please contact your appointed Minespider representative if you are interested in using this option.

<input type="checkbox"/>	B60FADE1	Minespider AG	Processing Plant	Coltan ore	190	Kilograms	2021-10-07	Draft	...
<input type="checkbox"/>	9B86EDAD	Minespider AG	Processing Plant	Coltan ore	200	Kilograms	2021-10-07	Draft	...
<input type="checkbox"/>	E3F45B75	Minespider AG	Processing Plant	Coltan ore	323	Kilograms	2021-10-07	Draft	...
<input type="checkbox"/>	7737A935	Minespider AG	Processing Plant	Ta2O5 pre-concentrate	3333	Kilograms	2021-10-07	Draft	...
<input type="checkbox"/>	071E692A	Minespider AG	Processing Plant	Ta2O5 pre-concentrate	2986	Kilograms	2021-10-07	Draft	...
<input type="checkbox"/>	6E16A898	Minespider AG	Processing Plant	Ta2O5 pre-concentrate	25	Kilograms	2021-10-07	Draft	...

Image 41. Overview of imported csv data file

7.4 Reviewing a Shipment Certificate

Received or sent shipment certificates can be reviewed on the shipment dashboard by clicking either on the **“Code”** on the left side of the dashboard or clicking on the **three dots(...)** on the right side and selecting **“Detailed View”** (Image 42).

Shipments Certificates

Search... Show filters Export all CSV

<input type="checkbox"/>	Code	Seller	Recipient	Material	Amount	Unit	Date	Status	Labels	Actions
<input type="checkbox"/>	569AF03F	Good Smelter	Solder Manufacturer1	Tin	2	ton	2021-10-11	Draft	Quality Assurance	...
<input type="checkbox"/>	FCES7874	Good Smelter	Solder Manufacturer1	Tungsten	122	ton	2021-10-11	Published		...
<input type="checkbox"/>	7CF45BD3	Minespider AG	Good Smelter	Tin	500	kg	2021-10-04	Published		...
<input type="checkbox"/>	77943307	Good Smelter	12test	Tungsten	1	ton	2021-10-01	Published		...
<input type="checkbox"/>	759C1865	Good Smelter	10test	Tin	2	ton	2021-9-30	Draft		...
<input type="checkbox"/>	5CAF802A	Good Smelter	ABB SuperGold	Tungsten	2	ton	2021-9-08	Published		...
<input type="checkbox"/>	704E7229	Good Smelter	ABB SuperGold	Gold	10	kg	2021-9-01	Draft		...
<input type="checkbox"/>	E0B57FC3	Minespider AG	Good Smelter	Tungsten	12000	kg	2021-8-18	Published		...

Detailed view
Edit
History Tree

Image 42. Reviewing a shipment certificate

When opened, you can review the files, metadata, entity certificates, and linked certificates associated with the shipment certificate.

There is an option to also **“Edit”** certificates (only those that you created and sent). You can do so by clicking on the **“Edit”** line. This can be helpful if, for instance, you forgot a document or misspelled something, either proactively or after you receive a customer request about it. In order to assure immutability, of course all edits will be registered and time-stamped in the blockchain. Please also note that when you edit a certificate, a new QR Code will be generated. The old one

however can be left on the products, if it has already been attached: If it is scanned, the user will get a note stating the certificate is deprecated and will be able to proceed to the updated certificate.

Once you open the shipment certificate in the top left corner of the detailed view, by clicking on the **“Published”** icon, you can access the Block Explorer (see the Section below). On the top right you will be able to access the certificate’s **“History tree”** and **“Ask for documents”** from the sender (see section 7.5 for more details). The history tree can also be accessed from the main dashboard, (see Image 42 above).

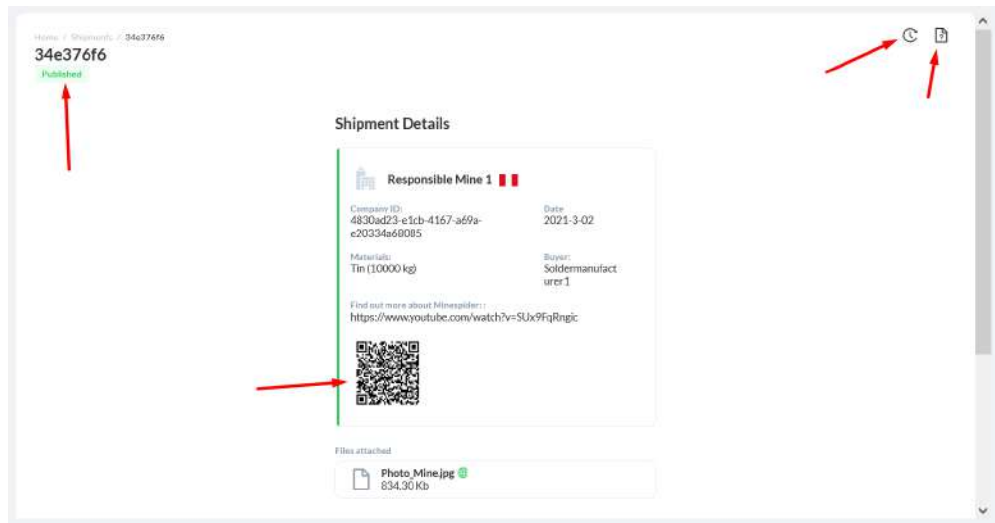


Image 43. Reviewing a shipment certificate (history tree and request documents)

7.5 History Tree

The History Tree is a very good visual representation of the created shipment certificate. It provides for an initial overview of the most important details of a shipment and its origin in a visual way. This can be particularly helpful for auditing purposes or additional sharing with you clients as besides its basic information (Sender; Recipient; Date; Materials;) It also shows the chain of custody details for the certificate created, especially when it consists of linked shipments (more on **“Link material origin (previous shipments)”** on page 27 and Step 2 of Creating Shipment certificates). For instance, Image 44 presents an overview of a certificate history tree for a shipment sent from Switzerland but which has a linked shipment originating from Rwanda. This means the current shipment certificate is composed of materials coming from Rwanda and from which total only a certain amount is being linked and sent. In addition to this it is worth mentioning that the CoC tool includes the CAHRA alerts, in this case represented by the red triangle on the History tree (Image 44).

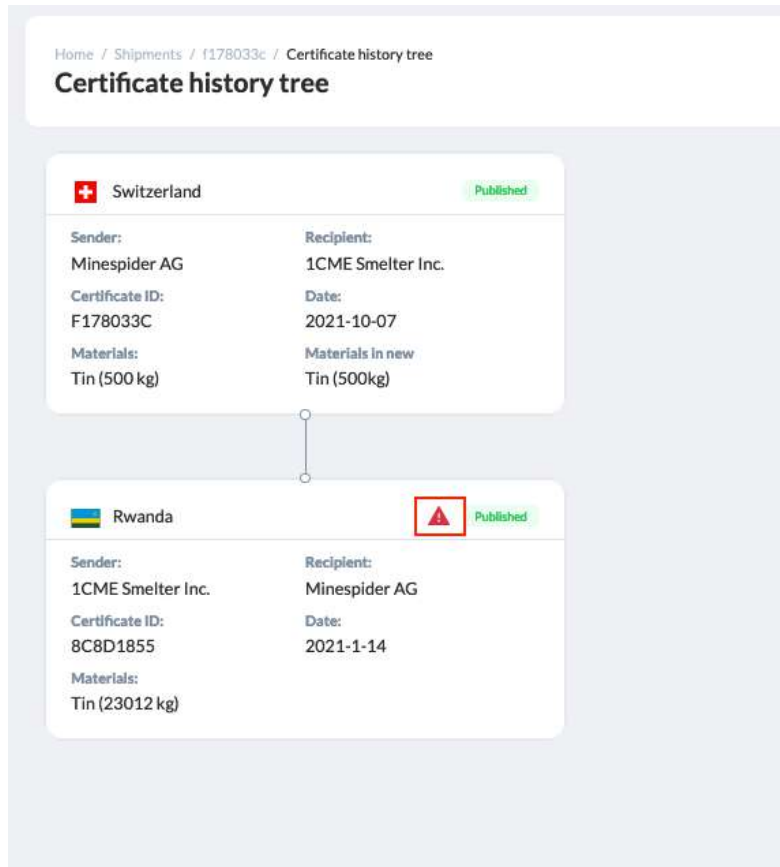


Image 44. A sample Certificate History Tree

7.6 Requesting more information

Sometimes, you might get a shipment from your supplier and realize that they forgot to attach a document. Maybe there are also discrepancies in weight or any other irregularities you would like to follow up on with your supplier. You can do that via the **“Ask for documents”** button in the top right corner. In this case, the solder manufacturer needs more information from a smelter they purchased tungsten, from as shown on Image 45.




Good Smelter


Company ID:
54976e87-dc8e-4df3-9241-
e0d2823d2ef4

Date:
2021-10-11

Materials:
Tungsten (122 ton)

Buyer:
Solder
Manufacturer1



Image 45. Ask for documents from the Sender

Once you click on the button, you see a pop up window where you can directly insert text about what you are missing. By clicking **“Send”** the message will be sent to the Sender of the certificate (Image 46).

Request to edit certificate details

Good Smelter will be informed and will edit
certificate 1f14cbd5

Please share Standard Product Clearance
form No. AB-221-X

Send

Back

Image 46. Request to edit certificate details

On the receiving end (the Sender of the shipment certificate) will see an alert for the requested additional information, indicated by a red dot next to the code of the certificate (Image 47).

Home / Shipments

Shipments

Create shipment certificate

Certificates Overview

Your certificates:	New certificates:	Pending certificates:
25	22	3

Shipments Certificates

Search...

Show filters Export to CSV

<input type="checkbox"/>	Code	Seller	Recipient	Material	Amount	Unit	Date	Status	Labels
<input type="checkbox"/>	1F14CBD5	Good Smelter	Solder Manufacturer1	Tungsten	122	ton	2021-10-11	Published	



Image 47. Request to edit certificate details notification available to the Sender of the certificate

When opening the certificate, the request can be accessed in the top right corner (Image 48).


Home / Shipments / 1f14cbd5

1f14cbd5

Published


Good Smelter


Company ID: 54976e87-dc8e-4df3-9241-e0d2823d2ef4	Date: 2021-10-11
Materials: Tungsten (122 ton)	Buyer: Solder Manufacturer1



...

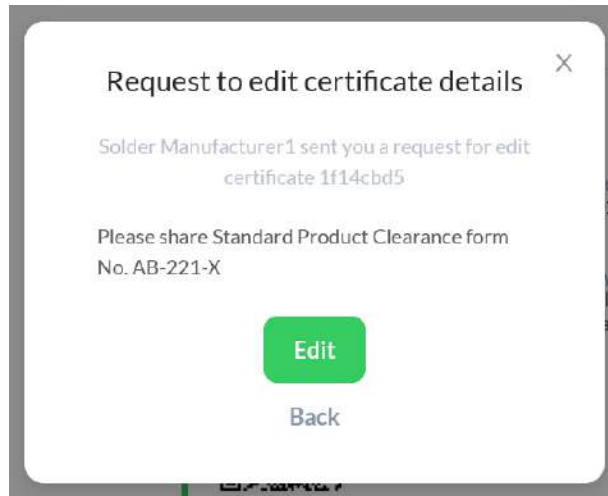


Image 48. Adding requested information to a certificate

When clicking on the dialogue field, you can review the request and then proceed to implement the requested edits or add the required documentation. To do so, you just go step by step through the same steps you did when creating the certificate in the first place. After the edit, the shipment certificate will be updated.

Important: After the update a new QR Code will be generated. If the QR Code has already been attached to the shipment, it's not a problem: when scanning an outdated QR Code, the user will get a notification that this is an deprecated version, and will be linked to the most recent one.

8. The Blockchain Explorer

Minespider transitioned from an Ethereum Side-Chain to its own Blockchain. Minespider is still using Ethereum technology, most notably Geth Nodes. To view your transactions on the blockchain, you can access the blockchain explorer by clicking on the **"Published"** badge on a Certificate, either on the dashboard (Image 49) or on a certificate you have opened (Image 50).

Home / Shipments
Shipments

Create shipment certificate

Certificates Overview

Your certificates: 20

New certificates: 18

Pending certificates: 2

Shipments Certificates

Search...

Show filters

Export as CSV

<input type="checkbox"/>	Code	Seller	Recipient	Material	Amount	Unit	Date	Status	Actions
<input type="checkbox"/>	DC653F81	Soldermanufacturer1	CME Ltd.	Gold	12	ton	2021-8-10	Draft	...
<input type="checkbox"/>	1D4AAD51	Soldermanufacturer1	Metals&Minerals Trading Company Inc.	Tungsten	2	ton	2021-6-14	Draft	...
<input type="checkbox"/>	34E376F6	Responsible Mine 1	Soldermanufacturer1	Tin	10000	kg	2021-3-02	Published	...
<input type="checkbox"/>	D70329ED	Responsible Mine 1	Soldermanufacturer1	Gold	57	kg	2021-3-02	Published	...
<input type="checkbox"/>	C45A746F	Minespider AG	Soldermanufacturer1	Tin	22132	kg	2021-2-26	Published	...

Image 49. Accessing the blockchain explorer through the Shipment Dashboard

Home / Shipments / 34e376f6

34e376f6

Published

Shipment Details

Responsible Mine 1

Company ID:
4830ad23-e1cb-4167-a69a-e20334a680b5

Date:
2021-3-02

Materials:
Tin (10000 kg)

Buyer:
Soldermanufacturer1

Find out more about Minespider.:
<https://www.youtube.com/watch?v=SUx9FqRngic>

Files attached

Photo_Mine.jpg
834.30 Kb

Image 50. Accessing the blockchain explorer through opened certificate

Clicking on that will take you to the transaction record of that specific transaction (Image 51).



Image 51. Blockchain transaction record of a clicked shipment certificate

You will see the date, the type of transaction (**“created”** in this case, meaning that a certificate has been created), and the transaction hash. That is a unique string of numbers and characters automatically assigned to any transaction that has been validated and added to the blockchain. Clicking on **“Transactions”** in the top left corner will take you to the general overview of transactions on Minespider’s blockchain.

There, you can see the hashes of the transactions, where the transactions originated (**not** where they went to), the type and the time stamp. You can also review the general transaction volume on the blockchain over the course of time.

Please note that you will not be able to see a company’s name, just their associated public keys (**“blockchain addresses”**) (Image 52).

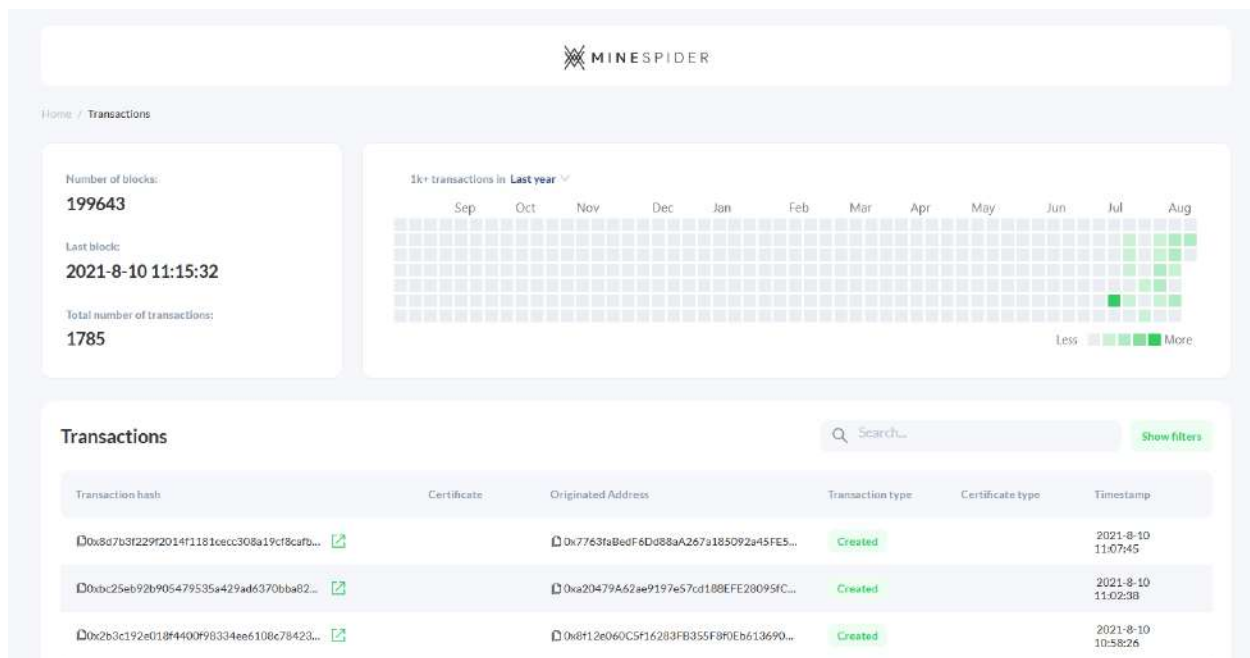


Image 52. Blockchain transaction records

By clicking on **“Home”** in the top left corner, you’ll get an overview of the blocks created. As opposed to the previous window, which showed you individual transactions (Image 53).

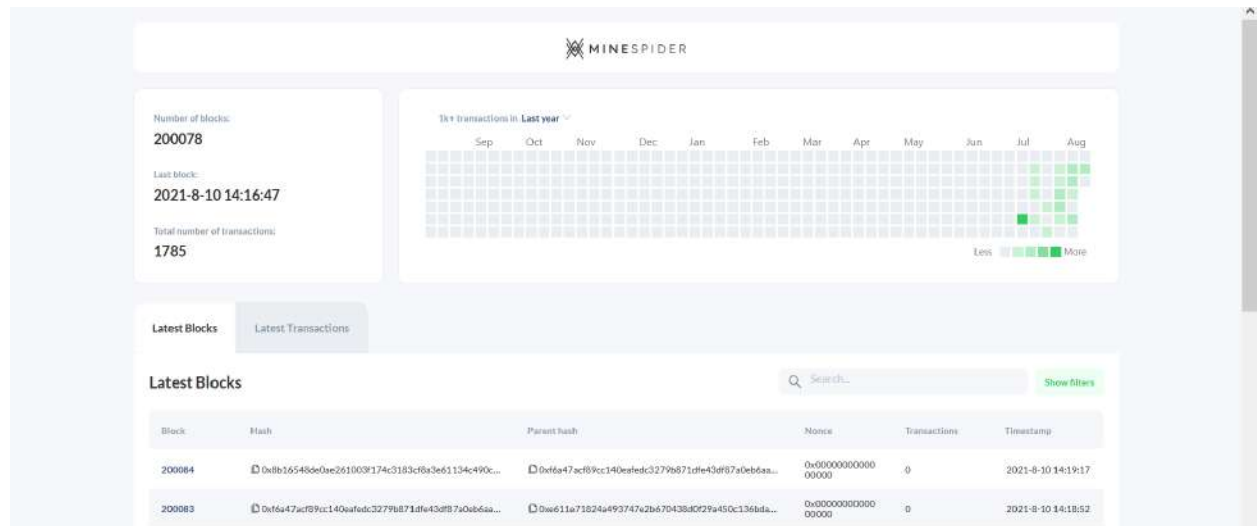


Image 53. Blockchain transaction records

Essentially, having a block explorer allows you, as a user, to check transactions linked to the blockchain. You can also verify that your transactions were carried out and published to the blockchain through the platform (the **“Published”** badge on a shipment certificate indicates this), but the explorer gives you the chance to actually browse the blockchain itself. That being said, you do not need to interact with the block explorer in your everyday use of the Minespider Platform. That’s why you have the app, but for all interested to see how it looks in the back, you can explore this tool.

9. An example of shipment certificates flow from Mine to Smelter

9.1 Shipment certificates: from Mine to Trader/Smelter

Here we will provide a step by step guide for creating shipment certificates at a mine site, and suggest what information can be included. Please note that this is only an indication of what a certificate can carry at mine level, however it is entirely up to the user to decide if they wish to add any of these details, based on their internal due diligence policies and practices.

Type of Certificate	Responsibility	Action	Step	Field	Entry	Layer details (MS suggestion)
Shipment Certificate (Mine Level)	Due Diligence Team	Create New Shipment Certificate	1	Select your recipient	Choose Recipient	Private
				Type of material	Metal	Public
				Material	Choose material (Tin, Tantalum, Tungsten...)	Public
				Unit	Choose unit	n/a
				Raw amount	[insert number]	Public
			2	Link Material Origin (previous shipments)	Not needed for mines	Transparent
				Upload files	Ex. Mine sheets/tag and weight lists/ packing lists/ XRF analysis etc.	Transparent
				Label	Ex. Mine; [add Mine name]	n/a
				Add Information (metadata)	ex. as 'Title' you can add Material details; and as 'Description' - Cassiterite or any other detail	Public
				Add Information (metadata)	ex. 'Title' - Mine origin 'Description' - write the mine name	Transparent
				Add Information (metadata)	Scan each tag and add the weight in the description field	Transparent
				Add Information (metadata)	Ex. you can assign lot number or add transport details (such as route taken and driver details)	Transparent
			3	Location	GPS coordinates	Public
				Link entity certificate	Ex. mine licence saved as template	Transparent
			4	Confirm and publish certificate	Check the 'I agree' box	n/a

Image 54. Table view suggestion of details that can be added to a shipment certificate coming from a mine site

A simple flowchart detailing mine to trader or smelter is presented in Image 55.

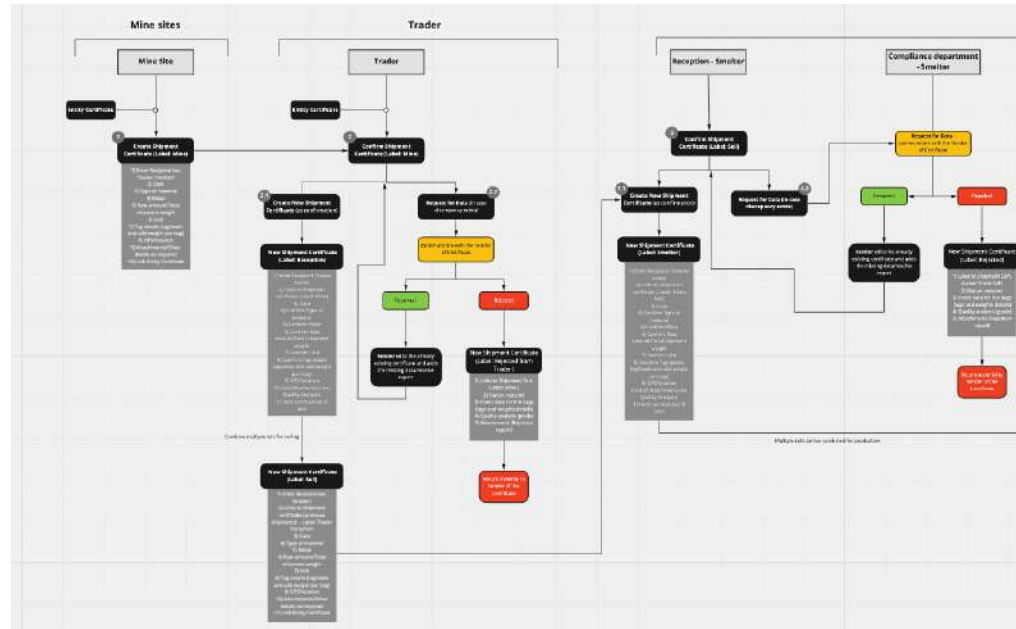


Image 55. Sample Mine to Trader/or Smelter flowchart

Once the material at the mine site is compiled and ready to be shipped either to a trader, smelter or other participant in the supply chain, you can include those details and evidence it on the Minespider app by following the below steps.

Step 1: Buyer

Click on the arrow in the ***“Select your Recipient”*** box to choose who you are sending the material to. If the recipient is not listed, you can always add it by clicking on ***“Add new recipient”***.

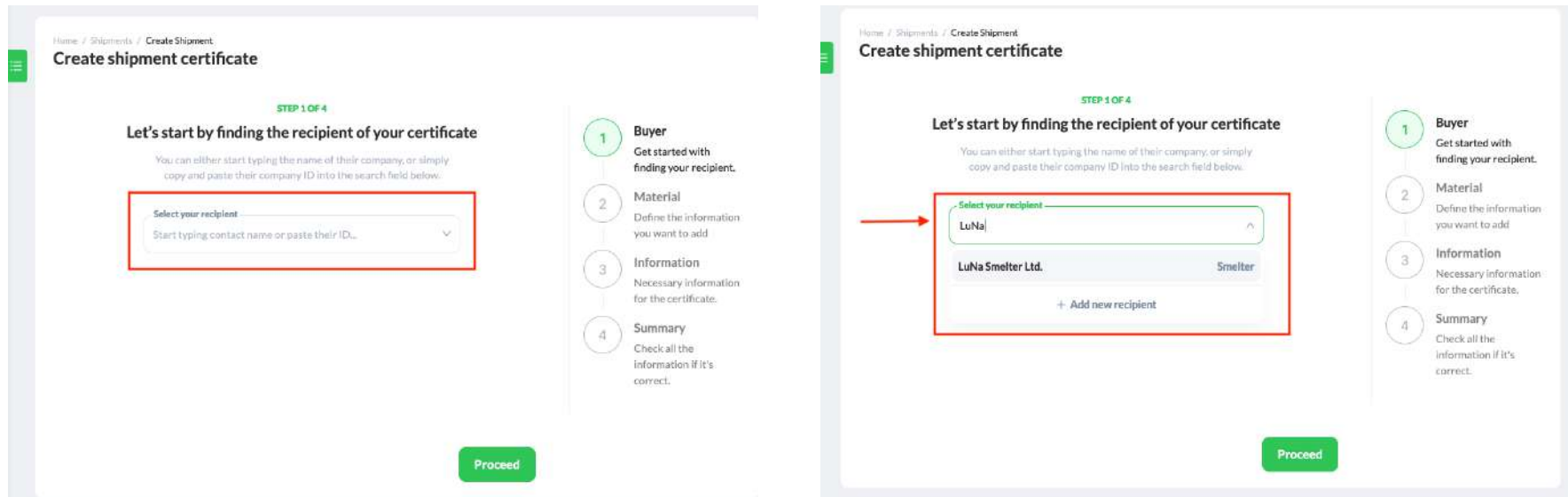


Image 56. Creating shipment certificate (at mine site): Finding your recipient

Step 2: Add Material

Add details about the material you are sending - here is where you provide the details of what is going to be sent and it is defined as public data (Image 57).

Please note that you can add your custom category here in case the material you are sending is not listed in our drop down menu (for more details see page 25 and 26 on Adding Custom Material).

Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

1 ADD MATERIAL

+ Link material origin (previous shipments)

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Back

Proceed

Home / Shipments / Create Shipment

Create shipment certificate

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material: Metal

Material: Select material

Unit: Tonne

Raw amount:

Add material

Back

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 57. Creating shipment certificate (at mine site): Add material details

Once all details are inserted click on **"Add Material"**, close the window and if you do not want to link any other shipments just proceed by clicking the **"Proceed"** button (Image 58).

Home / Shipments / Create Shipment

Create shipment certificate

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material
Metal

Material
Tin

Unit
Kilograms

Raw amount
678

Add material
Back

Buyer
Get started with finding your recipient.

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Back Proceed

Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

ADD MATERIAL

Material:
Tin (678 kg)

+ Link material origin (previous shipments)

Buyer
Get started with finding your recipient.

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Back Proceed

Image 58. Creating shipment certificate (at mine site): Add material details

Step 3: Add Information

In this section you can add all information about the shipment either through uploading files, adding tag details, labels, location of the mine or similar, based on your internal procedures. The **“Add Information”** field gives a lot of flexibility to include extra details too. Please refer to Image 59 as an example of what that information can be.

Home / Shipments / Create Shipment

Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files.
These files would be included in your shipment certificate.

Labels

Add labels to be included in your certificate

Label
Type here

Further Information

Add information to be included in your certificate

+ Add information

+ Location

+ Link entity certificate

Buyer
Get started with finding your recipient.

Material
Define the information you want to add.

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 59. Creating shipment certificate (at mine site): Add information

As described in Section 7, Labels are a crucial and important part of indicating certain details such as supply chain point and are also very helpful when viewing the dashboard, as they provide for easy differentiation between certificates. When sending material from the mine site, you can add a Label stating the name of the mine or even simply “mine” to indicate where it came from. An example of how this can look is presented on Image 60.

Home / Shipments / CreateShipment

Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files

These files would be included in your shipment certificate.

Labels

Add labels to be included in your certificate

Label

Mine site X ×

Further Information

Add information to be included in your certificate

+ Add information

Location

+ Link entity certificate

✓ **Buyer**
Get started with finding your recipient.

✓ **Material**
Define the information you want to add.

3 **Information**
Necessary information for the certificate.

4 **Summary**
Check all the information if it's correct.

Image 60. Adding labels to indicate the location (Mine site)

In the event your material comes with tags (often the case for the 3T materials), you can scan the tags' barcodes by using the Minespider barcode reader. This comes with the mobile web version of Minespider, which you can use to scan your tags by clicking on the marked icon (*Note: you do not need to download an app. just go to <https://app.minespider.com/> in your browser like you would on the computer*). Once you click it, the application will request access to your camera. This needs to be granted in order for the barcode reader to work. Once that is set, point the camera to the barcode and the details will be automatically fed into the **“Description”** field from the **“Add information”** section. You can continue and add the weight next to the tag number and move forwards with scanning the rest of the tags (Image 61).

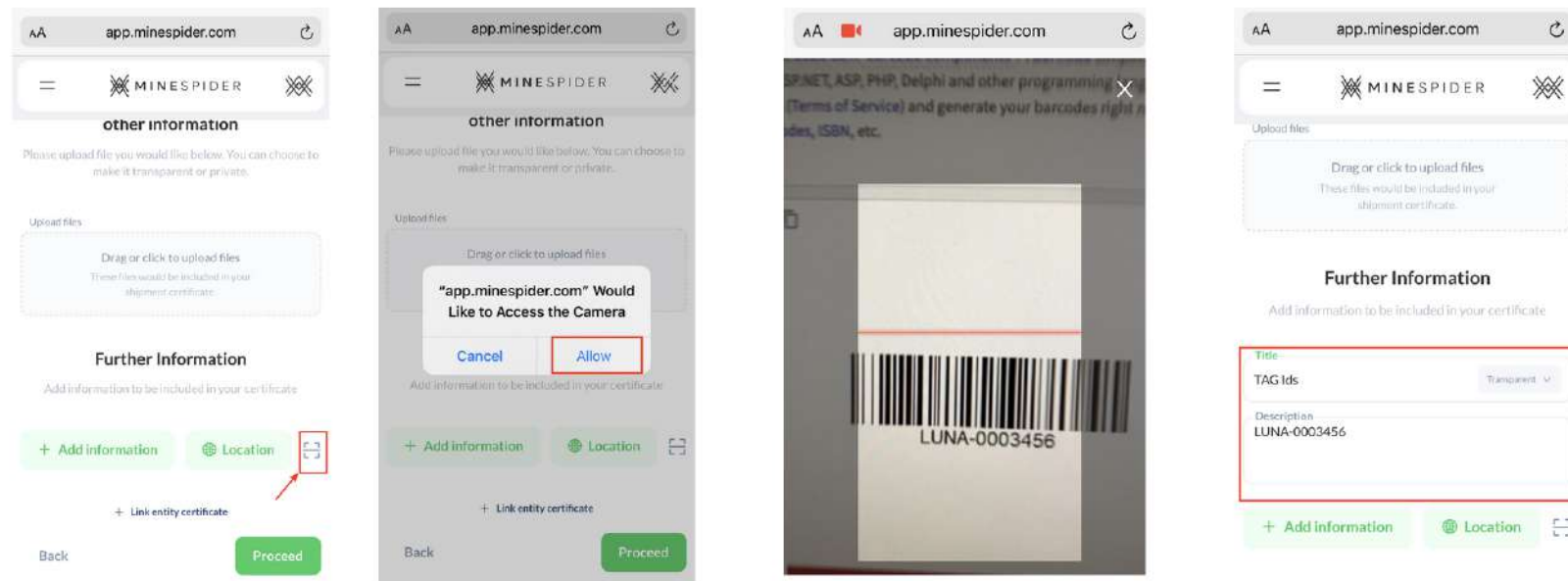


Image 61. Using the barcode reader through the mobile web version

One example of what Step 3 can include is shown below. It is entirely up to the Sender to decide the type of information and layer is for sharing based on the shipment requirements. Once all is in good order you can click **“Proceed”** and move to the final step (Image 62).

Home / Shipments / Create Shipment
Create shipment certificate

Drag or click to upload files
These files would be included in your shipment certificate.

Further Information
Add information to be included in your certificate.

Title

Material details

Public

Description

Cassiterite

Title

Mine name and location

Required

Description

Muraguta - province Kigali, Rwanda

Title

TAG ids

Required

Description

LUNA-0003456-59 kg; LUNA-0003458-24kg; LUNA-0003459-56kg

Title

Required

Description

+ Add Information Location

+ Link entity certificate

Back Proceed

Image 62. Overview of added data with barcode scanner

An additional thing that can bring value when coming to identifying the location is the **“Location”** button. This is very important as it indicates the right spot where the shipment is consolidated and from where the certificate will be shipped. Image 63 shows how this is done, where the coordinates are pre-filled automatically once access is granted (more details on this are also available in Section 7).

Create shipment certificate

Labels

Add labels to be included in your certificate

Label

Type here

Further Information

Add information to be included in your certificate

+ Add information

Location

+ Link entity certificate

Buyer

Get started with finding your recipient.

Material

Define the information you want to add

3

Information

Necessary information for the certificate.

4

Summary

Check all the information if it's correct.

Back

Proceed

Image 63. Adding GPS location

Once all the details for the shipment from the mine site are added the next step is the confirmation of the data added so that the certificate can be published.

Step 4: Summary

This is where you review all the entered information and how the Certificate will look like. Once you are happy with the details you can check the box and **“Publish”** the certificate (Image 64). In case there are some changes that need to take place, you can always go **“Back”** and modify the details.


Home / Shipments / Create Shipment

Create shipment certificate

STEP 4 OF 4

Please review your certificate details below
 If all is correct, feel free to finalize the creation of your new certificate.
 If you would like to make amendments, click back to make changes.

Minespider AG
 Company ID: f8e40262-2b79-4cdc-9ab8-dc065eb78be3
 Date: 2021-9-07
 Materials: Tin (678 kg)
 Buyer: LuNa Smelter Ltd.
 Material details: Cassiterite

Sender & Buyer information
Minespider AG Sender
 Address: Dammstr 16, 6300, Zug, Switzerland
LuNa Smelter Ltd. Buyer 
 Address: Karuruma, Jabana, Gasabo, Po. Box. 1011, Kigali, Rwanda

Transparency Layer
 Transparency details
 Mine name and location: Mururura - province Kuskumna, Rwanda
 TAG ID: LUNA-0003456 - 59kg; LUNA-0003458 - 24kg; LUNA-0003459 - 56kg

☒ I agree with Minespider's Terms of Use and Privacy Policy and that the information can be shared and published in accordance with the assigned category of publication.

Back Publish certificate

Buyer
Get started with finding your recipient.

Material
Define the information you want to add

Information
Necessary information for the certificate.

Summary
Check all the information if it's correct.

Image 64. Summary and confirmation of information for publishing the certificate on the blockchain

Here it is, your shipment certificate has been published. Scan the QR code to get more information and test it out. Additionally, you can link this certificate to any exports you may have in the future if this shipment has been part of it (Image 65).

Shipment Details

	
Company ID: f8e40262-3b79-4cdc-9ab8- dc061eb7b6e3	Date: 2021-9-07
Materials: Tin (678 kg)	Buyer: LuNa Smelter Ltd.
Material details: Cassiterite	
	

Sender & Buyer information

Minespider AG 
Address: Dammstr 16, 6300, Zug, Switzerland
LuNa Smelter Ltd. 
Address: Karuruma, Jabana, Gasabo, Po. Box. 1011, Kigali, Rwanda

Transparency Layer

Transparency details
Mine name and location: Mururura - province KwaZulu, Rwanda
TAG Ids: LUNA-0003456 - 59kg; LUNA-0003458 - 24kg; LUNA-0003459 - 56kg

Image 65. Overview of the published shipment certificate

9.2 Shipment certificates: Receiving material in the Smelter (Reception)

Smelters often receive multiple shipments on which they need to perform various due diligence checks in order to record the chain of custody details. Similarly to above we will provide a step by step guide and overview of details that can be included in shipment certificates created by smelter's due diligence teams. Please refer to Image 66 and 67 for a table view and flowchart presentation of this part of the supply chain. As noted previously, this is just a suggestion from Minespider's side as to how details can be added and it is up to the user to decide what they want to track and add data for their shipments.

Type of Certificate	Responsibility	Action	Step	Field	Entry	Layer details (MS suggestion)
Shipment Certificate (Reception Level)	Due Diligence Team	Create New Shipment Certificate	1	Select your recipient	Choose Recipient	Private
				Type of material	Metal	Public
				Material	Choose material (Tin, Tantalum, Tungsten...)	Public
				Unit	Choose unit	n/a
				Raw amount	[insert number]	Public
					Ex. Here you can link the Shipment certificate that is being verified at reception to present full chain of custody	
			2	Link Material Origin (previous shipments)		Transparent
				Upload files	Ex. Packing lists/Lab analysis etc.	Transparent
				Label	Ex. Reception; verified at reception;	n/a
					Ex. as 'Title' you can add Material details; and as 'Description' - Cassiterite	Public
				Add Information (metadata)	Ex. 'Title' - Mine origin 'Description' - write the mine name	Transparent
				Add Information (metadata)	Scan each tag and add the weight in the description field	Transparent
				Add Information (metadata)	Ex. you can assign Lot number	Transparent
				Location	GPS of the Smelter	Public
			3	Link entity certificate	Optional	Transparent
			4	Confirm and publish certificate	Check the 'I agree' box	n/a

Image 66. Table view suggestion of details that can be added to a shipment certificate in Smelter Reception

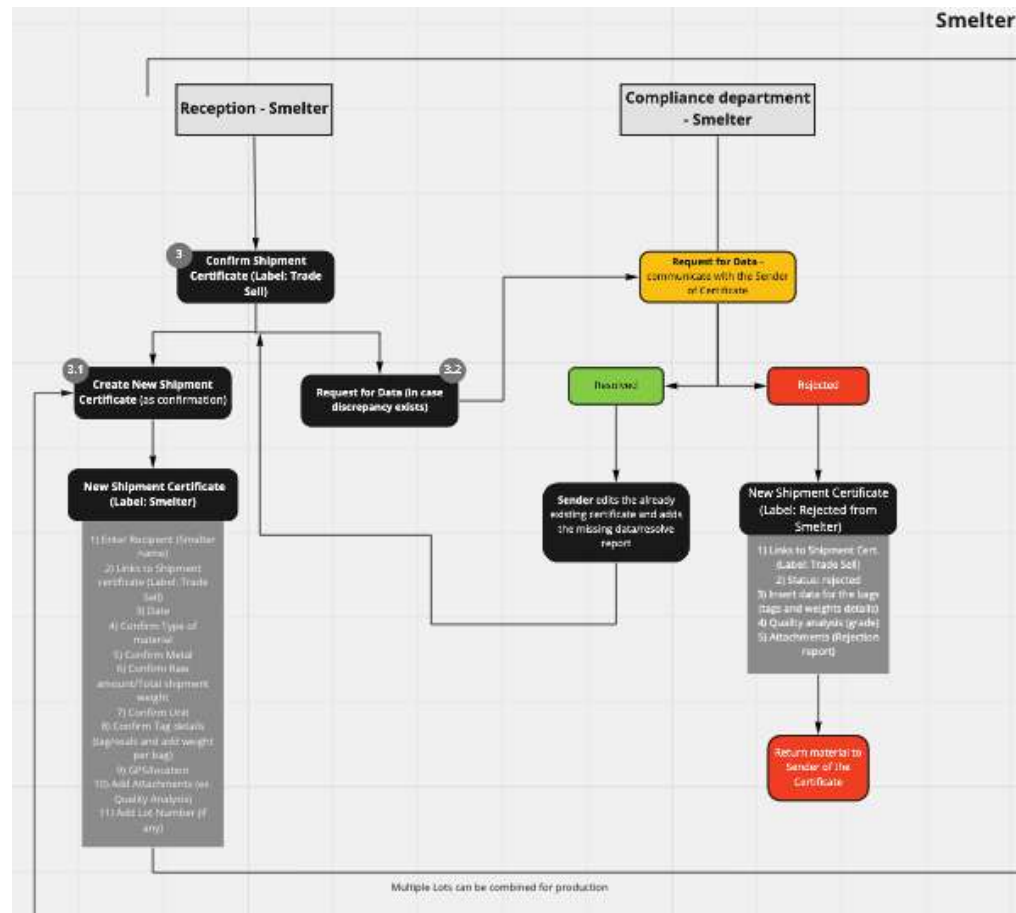
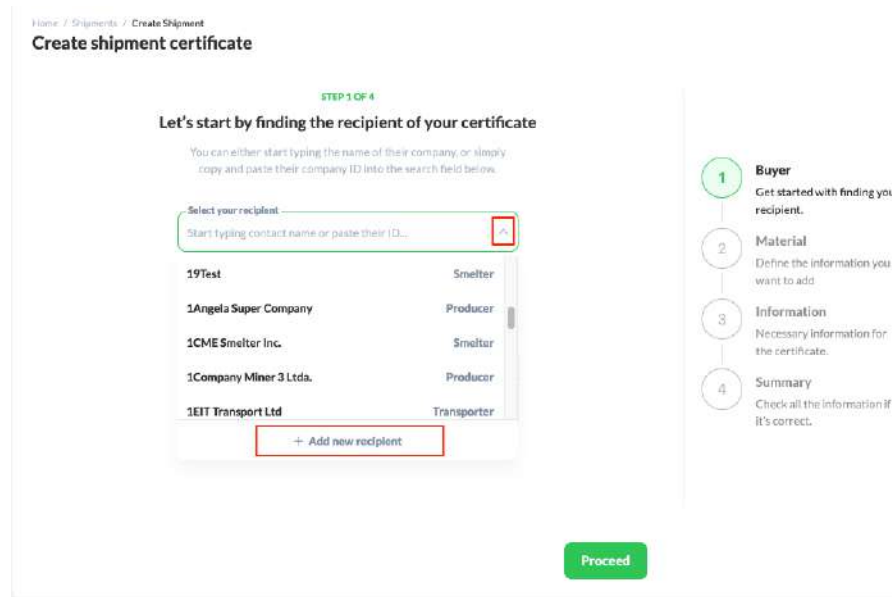


Image 67. Table view suggestion of details that can be added to a shipment certificate in Smelters when material is received

To create a shipment certificate to evidence on the blockchain the material which was received within your smelter you can start by following the listed steps below.

Step 1: Buyer

Click on the arrow in the **“Select your Recipient”** box to choose who you are sending the material to. If the recipient is not listed, you can always add it by clicking on **“Add new recipient”** (Image 68). In this case as what happens is a Smelter’s due diligence team is verifying received material and adding it on the blockchain the recipient will be the same smelter who was the Recipient of the material (ex. Sender: smelter X; Recipient: Smelter X). This can also be an optional step for many companies, as it is a verification and evidencing of received material on the blockchain that helps companies assign additional details such as lab analysis and lot numbers to shipments which are compliant for them.



Home / Shipments / Create Shipment

Create shipment certificate

STEP 1 OF 4

Let's start by finding the recipient of your certificate

You can either start typing the name of their company, or simply copy and paste their company ID into the search field below.

Select your recipient

Start typing contact name or paste their ID...

19Test	Smelter
1Angela Super Company	Producer
1CME Smelter Inc.	Smelter
1Company Miner 3 Ltda.	Producer
1EIT Transport Ltd	Transporter

+ Add new recipient

Proceed

1 Buyer

Get started with finding your recipient.

2 Material

Define the information you want to add.

3 Information

Necessary information for the certificate.

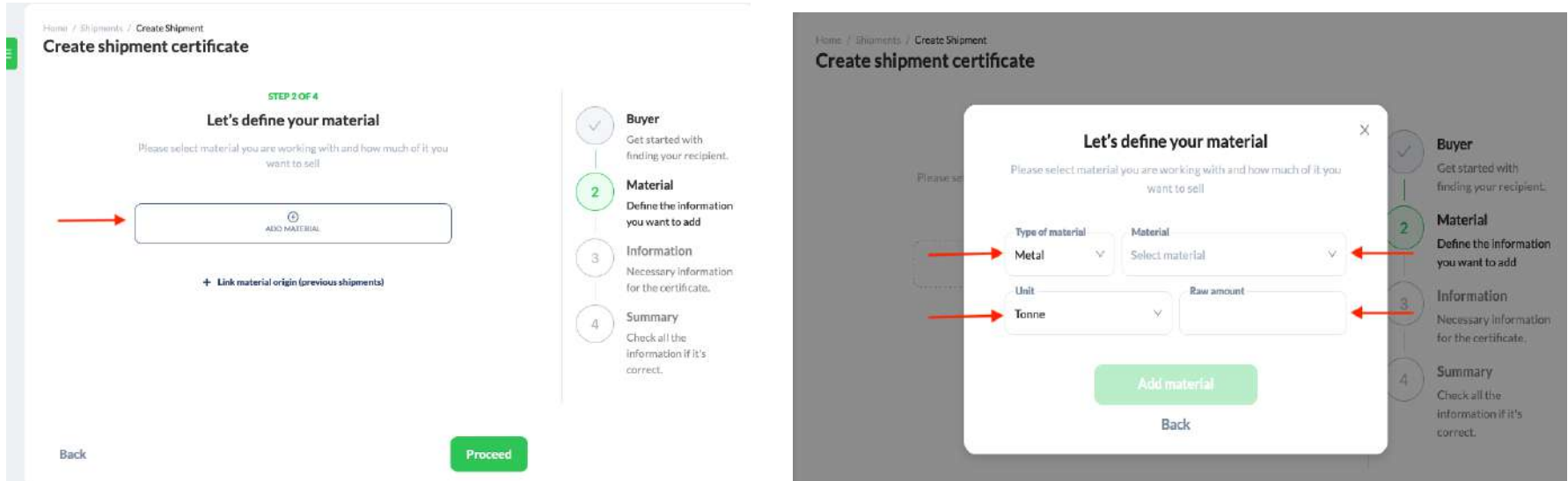
4 Summary

Check all the information if it's correct.

Image 68. Creating shipment certificate (at Smelter Reception): Finding your recipient

Step 2: Add Material

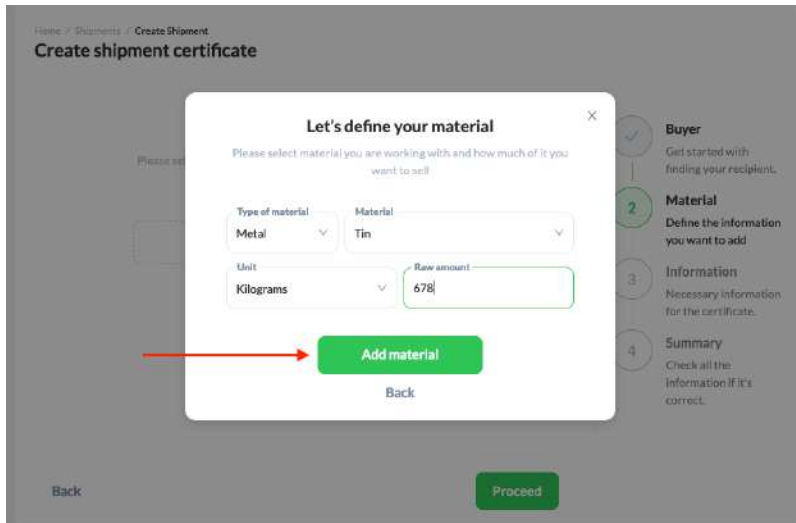
Add details about the material you are evidencing - here is where you provide the details of the material and it is defined as public data (Image 69). Please note that you can add your custom category here in case the material you are sending is not listed in our drop down menu (for more details see page 25 and 26 on Adding Custom Material).



The screenshot displays the 'Create shipment certificate' process at Step 2 of 4, 'Let's define your material'. The main interface shows a progress bar with four steps: 1. Buyer (Get started with finding your recipient), 2. Material (Define the information you want to add), 3. Information (Necessary information for the certificate), and 4. Summary (Check all the information if it's correct). The 'Material' step is currently active. Below the progress bar, there is a large empty box with an 'ADD MATERIAL' button and a link to '+ Link material origin (previous shipments)'. A red arrow points to the 'ADD MATERIAL' button. A 'Proceed' button is at the bottom right. A modal window titled 'Let's define your material' is open, showing fields for 'Type of material' (Metal), 'Material' (Select material), 'Unit' (Tonne), and 'Raw amount'. The 'Add material' button is highlighted in green. Red arrows point to the 'Type of material', 'Material', 'Unit', and 'Raw amount' fields. The modal also has a 'Back' button.

Image 69. Creating shipment certificate (at Smelter Reception): Add material details

Once all details are inserted click on **"Add Material"**, close the window and if you do not want to link any other shipments just proceed by clicking the **"Proceed"** button (Image 70).



Home / Shipments / Create Shipment

Create shipment certificate

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material

Metal

Material

Tin

Unit

Kilograms

Raw amount

678

Add material

Back

Buyer

Get started with finding your recipient.

2 Material

Define the information you want to add

3 Information

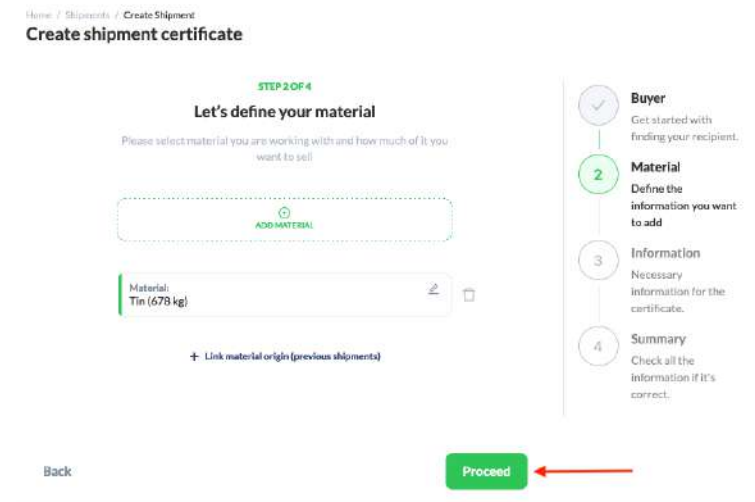
Necessary information for the certificate.

4 Summary

Check all the information if it's correct.

Back

Proceed



Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

ADD MATERIAL

Material: Tin (678 kg)

+ Link material origin (previous shipments)

Buyer

Get started with finding your recipient.

2 Material

Define the information you want to add

3 Information

Necessary information for the certificate.

4 Summary

Check all the information if it's correct.

Back

Proceed

Image 70. Creating shipment certificate (at Smelter Reception): Add material details

Step 3: Add Information

In this section you can add all information about the shipment either through uploading files, adding tags details, labels, location of the mine or similar and based on your internal procedures. The **“Add Information”** field gives a lot of flexibility to include extra details too. Please refer to Image 71 as an example as to what that information can be.

Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files.
 These files would be included in your shipment certificate.

Labels

Add labels to be included in your certificate

Label

Type here

Further Information

Add information to be included in your certificate

+ Add information

Location

+ Link entity certificate

- ✓ **Buyer**
Get started with finding your recipient.
- ✓ **Material**
Define the information you want to add.
- 3 Information**
Necessary information for the certificate.
- 4 **Summary**
Check all the information if it's correct.

Image 71. Creating shipment certificate (at Smelter Reception): Add information

As described in Section 7, Labels are a crucial and important part of indicating certain details such as supply chain point and also very helpful when on the dashboard as they provide for easy differentiation to certificates. When receiving material from a mine site you can add a Label stating the name of the current phase or just “Received from Mine” to indicate where it is coming from. You can also specify the mine name. An example of how this can look is presented on Image 72.

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files
These files would be included in your shipment certificate.

Labels
Add labels to be included in your certificate

Label

Standard

Description

Received from Mine1 ✓

Lab analysis added

+ Add information

+ Location

+ Link entity certificate

Back

Proceed

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files
These files would be included in your shipment certificate.

Labels
Add labels to be included in your certificate

Label

Standard

Description

Received from Mine1 ✓

Lab analysis added

+ Add information

+ Location

+ Link entity certificate

Back

Proceed

Buyer
Get started with finding your recipient.

Material
Define the information you want to add.

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

confirmed at Reception × Received from Mine1 ×

Further Information
Add information to be included in your certificate

+ Add information

+ Location

Image 72. Adding labels to indicate the supply chain point (at Smelter Reception)

In the event your material comes with tags (which in most cases it happens for the 3T materials), you can scan the barcodes of them by using the Minespider barcode reader. This comes with the mobile web version of Minespider that you can use to scan your tags by clicking on the marked icon (Note: you do not need to download an app. just go to <https://app.minespider.com/> in your browser like you would on the computer). Once you click it, the application will request access to your camera. This needs to be granted in order for the barcode reader to work. Once that is set, point the camera to the barcode and the details will be automatically fed into the **"Description"** field from the **"Add information"** section. You can continue and add the weight next to the tag number and move forwards with scanning the rest of the tags (Image 73).

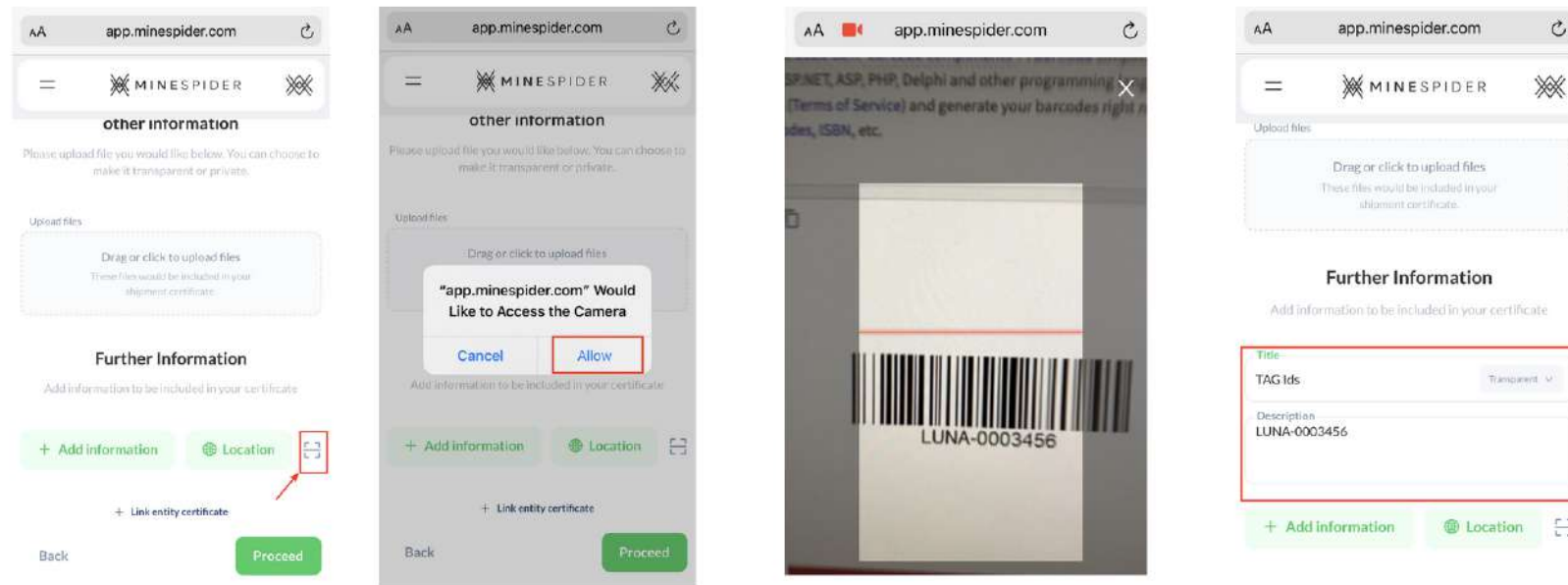


Image 73. Using the barcode reader through the mobile web version

An additional thing that can bring value when coming to identifying the location is the **"Location"** button. This is very important as it indicates the right spot where the shipment is consolidated/received or from where the certificate will be shipped. Image 74 shows how this is done, where the coordinates are pre-filled automatically once access is granted (more details on this are also available in Section 7)

Create shipment certificate

certificates and credentials

Labels

Add labels to be included in your certificate

Label

Type here

Further Information

Add information to be included in your certificate

+ Add information

Location

+ Link entity certificate

Buyer

Get started with finding your recipient.

Material

Define the information you want to add

3

Information

Necessary information for the certificate.

4

Summary

Check all the information if it's correct.

Back

Proceed

Image 74. Adding GPS location

One example of what Step 3 can include is shown below. It is entirely up to the Sender to decide the type of information and layer is for sharing based on the shipment requirements (Image 75).

Home / Materials / Create Shipment
Create shipment certificate

confirmed at Reception X Received from Mine1 X

Further Information
Add information to be included in your certificate

Title
Material details
Description: Cassiterite

Title
Mine origin
Description: Mine name X

Title
TAG Ids
Description: LUNA-0003456-25kg

Title
Lot
Description: Lot number 003/21 assigned at reception

Title
Lot
Description: 41.99810401011044

Title
Lot
Description: 21.397382749094543

Show location on the map

Back Proceed

Buyer
Get started with finding your recipient

Material
Define the information you want to add

3 Information
Necessary information for the certificate

4 Summary
Check all the information if it's correct

Image 75. Overview of added data with barcode scanner and additional data

Once all the details for the shipment are added the next step is the confirmation of the data added so that the certificate can be published.

Step 4: Summary

This is where you review all the entered information and how the Certificate will look like. Once you are happy with the details you can check the box and **“Publish”** the certificate (Image 76). In case there are some changes that need to take place, you can always go **“Back”** and modify the details.


Home / Shipments / Create Shipment

Create shipment certificate

STEP 4 OF 4

Please review your certificate details below
If all is correct, feel free to finalize the creation of your new certificate.
If you would like to make amendments, click back to make changes.

[Confirmed at Reception](#) [Received from Mine 1](#)



Date: 2021-10-28
Material: Tin 678 kg

Tin - 678 (kg)

Owner: **Minespider AG**

Public details

id: 41.99910405010944
hash: 21.39738274904543
[Link on map](#)
[Show location](#)

Sender & Buyer information

Minespider AG
Address: Dammstr 16, 4300 Zug, Switzerland

Minespider Smelter Test Ltd.
Address: Brazil

Transparency Layer

Transparency details
Material details: Cassiterite
Mine origin: Mine name X
ISO id: LUNA-0003456-25kg

[Back](#) [Publish certificate](#)

Buyer
Get started with finding your residents.

Material
Define the information you want to add.

Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 76. Summary and confirmation of information for publishing the certificate on the blockchain

Here it is, your shipment certificate has been published. Scan the QR code to get more information and test it out. Additionally, you can link this certificate to any exports you may have in the future if this shipment has been part of it (Image 77).

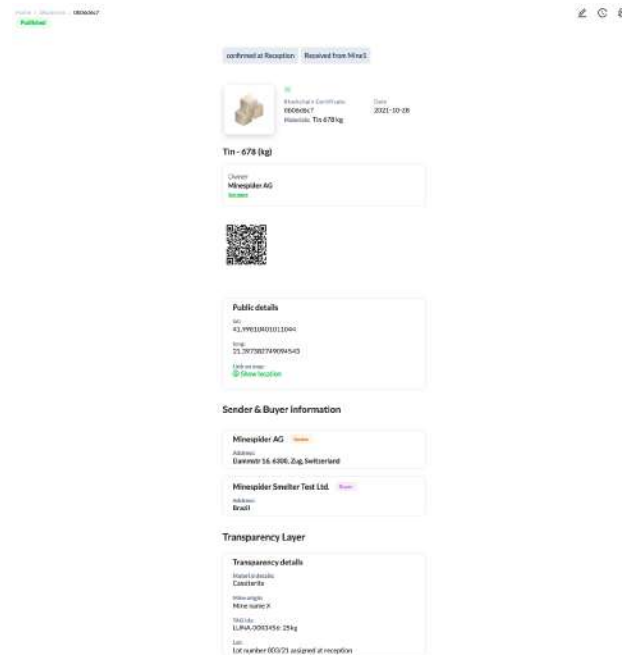


Image 77. Overview of the published shipment certificate

The in-smelter processes related to mixing different lots (material coming from different shipments) can also be mapped on the blockchain. The process of doing that will vary depending on the Smelter's due diligence and production practices. The Minespider app gives enough flexibility to capture and track all details based on the user requirements.

9.3 Shipment certificates: from Smelter to Trader/Client

Within the smelter processes materials undergo transformations and once the final smelter product is made a shipment can be concluded dependent on the quantities agreed for selling or export. In this section we will provide an overview as to what the shipment certificates sent for export or selling of material can contain as information referring to what we stated in the points above that all data added will depend on the users practices and needs for tracking.

Type of Certificate	Responsibility	Action	Step	Field	Entry	Layer details (MS suggestion)
Shipment Certificate (Export Level)	Due Diligence Team	Create New Shipment Certificate	1	Select your recipient	Client	Private
			2	Type of material	Metal	Public
				Material	Tin	Public
				Unit	Tonne/kg	n/a
				Raw amount	[insert number]	Public
				Link Material Origin (previous shipments)	Ex. you can link all the shipment Certificates from production that are to be shipped	Transparent
				Upload files	Ex. Quality analysis; Custom documents; Certificates etc.	Transparent
				Label	Ex. 'export' 'for export'	n/a
				Add Information (metadata)	Ex. as 'Title' you can add Material details; and as 'Description' - Tin Ingots for Export	Public
				Add Information (metadata)	Ex. you can add the Batch number	Transparent
				Add Information (metadata)	Ex. Transport route details	Transparent
				Location	GPS of the Smelter	Public
			3	Link entity certificate	Optional; ex. Sender's business licence or EU Conflict Minerals template or other regulation details	Transparent
			4	Confirm and publish certificate	Check the 'I agree' box	n/a

Image 78. Table view suggestion of details that can be added to a shipment certificate for export

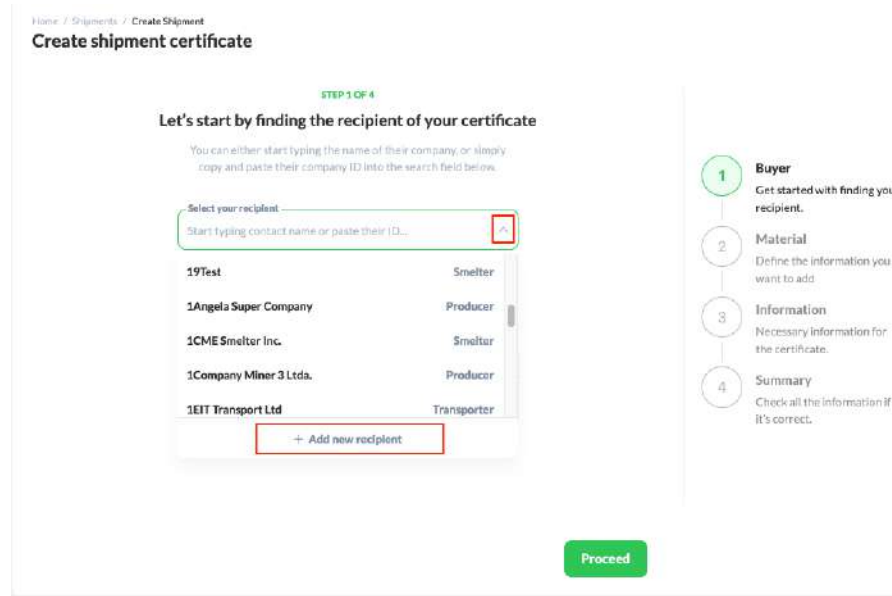


Image 79. Flowchart view of shipment certificate details for export from Smelter

Please refer to the steps below for creating your export shipment certificate from smelter to the next supply chain participant.

Step 1: Recipient

Click on the arrow in the **“Select your Recipient”** box to choose who you are sending the material to. If the recipient is not listed, you can always add it by clicking on **“Add new recipient”** (Image 80).



The screenshot shows the 'Create shipment certificate' interface. At the top, it says 'Home / Shipments / Create Shipment' and 'Create shipment certificate'. Below this, it indicates 'STEP 1 OF 4'. The main heading is 'Let's start by finding the recipient of your certificate'. A subtext explains: 'You can either start typing the name of their company, or simply copy and paste their company ID into the search field below.' There is a search box labeled 'Select your recipient' with a placeholder 'Start typing contact name or paste their ID...'. Below the search box is a list of recipients with their roles:

19Test	Smelter
1Angela Super Company	Producer
1CME Smelter Inc.	Smelter
1Company Miner 3 Ltda.	Producer
1EIT Transport Ltd	Transporter

At the bottom of the list is a button '+ Add new recipient'. To the right of the main content is a vertical progress bar with four steps:

- 1 Buyer**
Get started with finding your recipient.
- 2 Material**
Define the information you want to add
- 3 Information**
Necessary information for the certificate.
- 4 Summary**
Check all the information if it's correct.

At the bottom right of the interface is a green 'Proceed' button.

Image 80. Creating shipment certificate (at Smelter for Export): Finding your recipient

Step 2: Add Material

Add details about the material you are evidencing - here is where you provide the details of what is going to be sent and it is defined as public data (Image 81).

Please note that you can add your custom category here in case the material you are sending is not listed in our drop down menu (for more details see page 25 and 26 on Adding Custom Material).

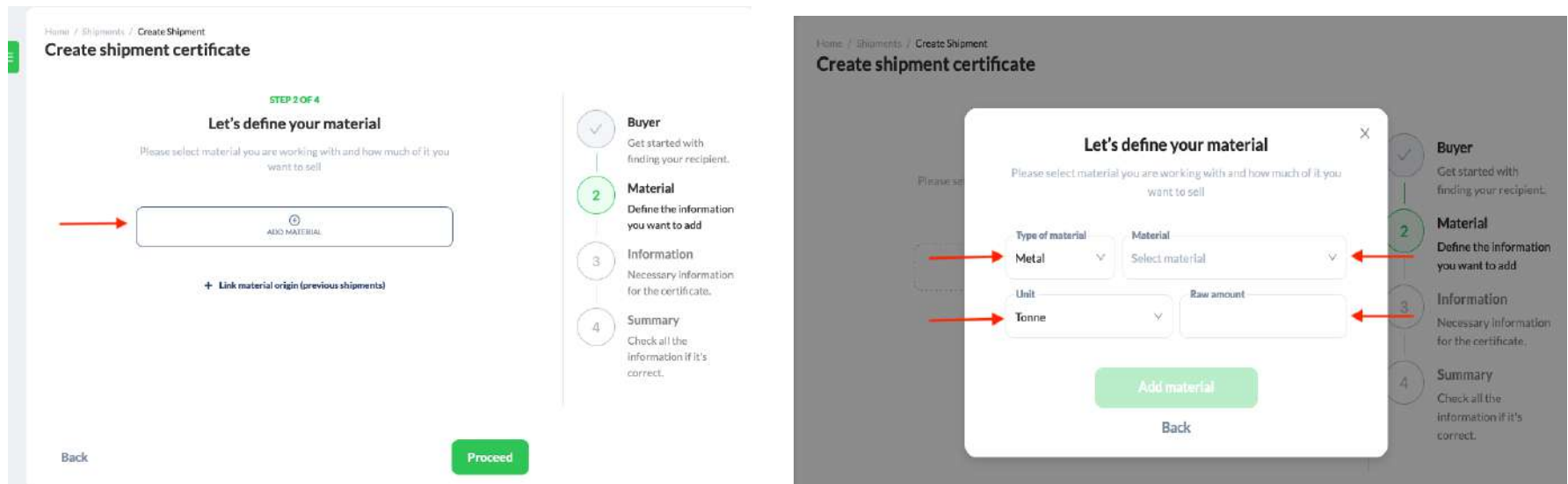
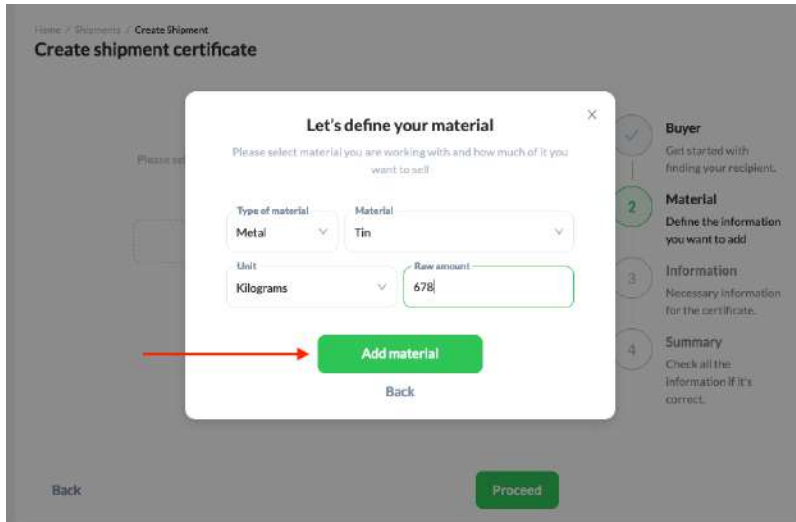


Image 81. Creating shipment certificate (at Smelter for Export): Add material details

Once all details are inserted click on **"Add Material"**, close the window and if you do not want to link any other shipments just proceed by clicking the **"Proceed"** button (Image 82).

As this is your export of a product that has been transformed (usually from ore or concentrate to a semi-product) here is a good point to provide the full chain of custody data going upstream to the mine level (if you already have that data available within Minespider) and use the **"Link material origin (previous shipments)"** option.



Home / Shipments / Create Shipment

Create shipment certificate

Let's define your material

Please select material you are working with and how much of it you want to sell

Type of material: Metal

Material: Tin

Unit: Kilograms

Raw amount: 678

Add material

Back

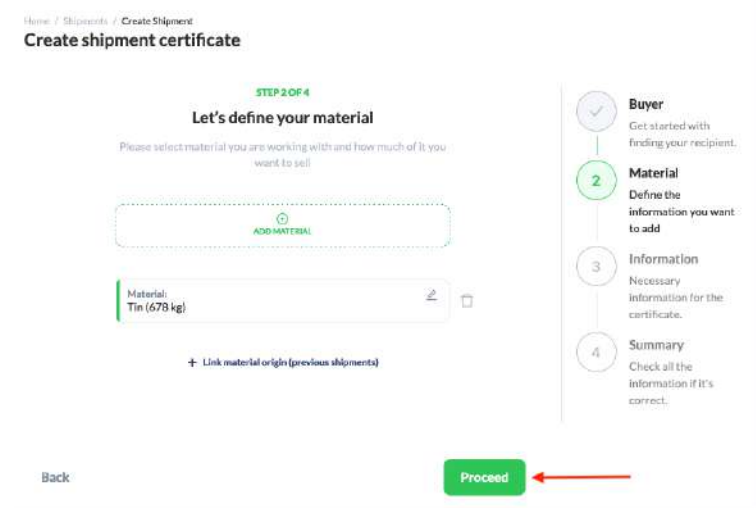
Buyer
Get started with finding your recipient.

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Back Proceed



Home / Shipments / Create Shipment

Create shipment certificate

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

ADD MATERIAL

Material: Tin (678 kg)

+ Link material origin (previous shipments)

Back **Proceed**

Buyer
Get started with finding your recipient.

2 Material
Define the information you want to add

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 82. Creating shipment certificate (at Smelter for Export): Add material details

When clicking on this line you are getting an overview of all your received shipments and here you can choose and link which shipments (and the relevant quantities from them) you would like to link to what you are about to export. Usually, this is where you link the shipments which were processed and are contained within your final product. An overview of this option is presented on Image 83 and 84.

Home / Shipments / Create Shipment

Create shipment certificate

Link previous Shipments

Date 2021-10-25	Buyer Minespider AG	Materials Li-Ion Battery XYZ 40 kg	
Minespider AG			
Date 2021-10-22	Buyer Minespider AG	Materials Cobalt 30 ton	23F315E7
Minespider AG			
Date 2021-10-08	Buyer Minespider AG	Materials Tungsten 12 ton	42921419
Show more details			
Date 2021-10-08	Buyer Minespider AG	Materials Tin 3 ton	8F00D008
Show more details			
Date 2021-10-07	Buyer Minespider AG	Materials Tin 25 kg	8364B051
Show more details			
Date 2021-9-30	Buyer Minespider AG	Materials Tin 1 ton	F0BF3EDC
Show more details			
Date 2021-8-19	Buyer Minespider AG	Materials Gold 10 kg	F4F95568
General Customer			
Back			
Link			

- 1 **Buyer**
Get started with finding your recipient.
- 2 **Material**
Define the information you want to add.
- 3 **Information**
Necessary information for the certificate.
- 4 **Summary**
Check all the information if it's correct.

Image 83. Linking previous shipments

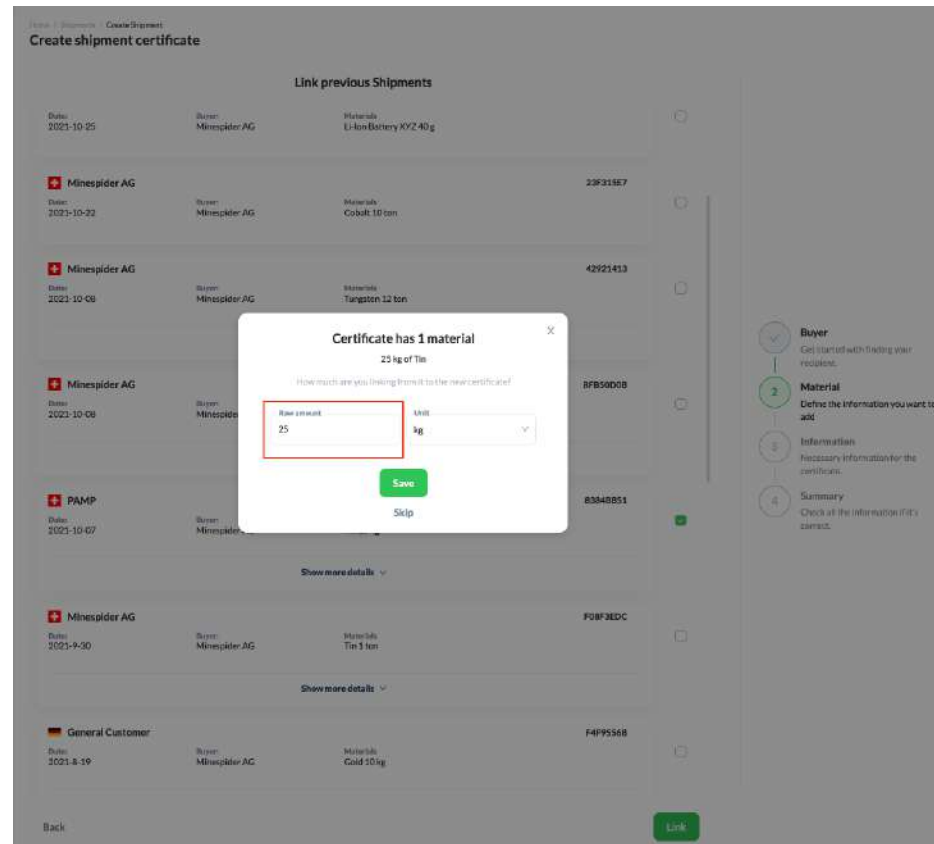


Image 84. Linking previous shipments and adding the quantity to be linked

Once you link all the shipments and you can see them listed (Image 85), you can click proceed and move on to the next step.

STEP 2 OF 4

Let's define your material

Please select material you are working with and how much of it you want to sell

ADD MATERIAL

Material: Tin (678 kg)

Linked previous shipments

1VA, Ltd.

Buyer: Minespider AG

Date: 2021-8-23

Materials: Tin (2 kg)

Materials to reuse: Tin (2kg)

Minespider AG

Buyer: Minespider AG

Date: 2021-5-17

Materials: Tin (100 kg)

Materials to reuse: Tin (100kg)

Volkner's Ltd Vehicle

Buyer: Minespider AG

Date: 2021-5-16

Materials: Tin (2 ton)

Materials to reuse: Tin (577kg)

Link material origin (previous shipments)

Buyer

Get started with finding your recipient.

2

Material

Define the information you want to add

3

Information

Necessary informations for the certificate.

4

Summary

Check all the information if it's correct.

Back

Proceed

Image 85. Overview of linked previous shipments

Step 3: Add Information

In this section you can add all information about the shipment either through uploading files, adding tags details, labels, location of the mine or similar and based on your internal procedures. The **“Add Information”** field gives a lot of flexibility to include extra details too. Please refer to Image 86 as an example as to what that information can be.

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Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files
These files would be included in your shipment certificate.

Labels

Add labels to be included in your certificate

Label
Type here

Further Information

Add information to be included in your certificate

+ Add information
Location
+ Link entity certificate

- ✓ Buyer
Get started with finding your recipient.
- ✓ Material
Define the information you want to add.
- 3 Information
Necessary information for the certificate.
- 4 Summary
Check all the information if it's correct.

Image 86. Creating shipment certificate (at Smelter for Export): Add information

As this is an export the **“Upload files”** box is very helpful as here a company can attach their supply chain policy, invoices, packing lists, custom documents and/or certification or anything related for an export procedure or that satisfies a legal requirement. Once uploading files, you would be able to choose the layer as to how you would like that file to be shared within the QR code (public, transparent or private) (Image 87).

Home / Smelters / Create Shipment

Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files
These files would be included in your shipment certificate.

Packing list (Staging).pdf 8,50 Kb

Transparent

Labels

Add labels to be included in your certificate

Label

Export

Further Information

Add information to be included in your certificate

5be85567

Transparent

Tin (1kg)

Transparent (selected)

In this context, "Transparent" means that this information becomes visible to all recipients who are linked to this certificate along a supply chain in the following:

Public: In this context, "Public" means that this information becomes visible to the public.

Private: In this context, "Private" means that this information becomes visible to the immediate recipient who receives this certificate.

✓ **Buyer**
Get started with finding your recipient.

✓ **Material**
Define the information you want to add.

3 Information
Necessary information for the certificate.

4 **Summary**
Check all the information if it's correct.

Image 87. Creating shipment certificate (at Smelter for Export): Uploading files and layer selection

As described in Section 7 Labels are a crucial and important part of indicating certain details such as supply chain point and also very helpful when on the dashboard as they provide for easy differentiation to certificates. When sending material from the Smelter to your Client you can add a Label stating the stage or an indication of it. An example of how this can look is presented on Image 88.

Home / Shipments / Create Shipment
Create shipment certificate

STEP 3 OF 4

Share certain files, entity certificates, or other information

Please upload file you would like below. You can choose to make it transparent or private.

Upload files

Drag or click to upload files
These file resolution included in your shipment certificate.

Packing list (Staging).pdf
1.01 Kb
Transparent ✓

PO (Staging).pdf
10.74 Kb
Private ✓

Supply Chain Policy (Staging...
8.43 Kb
None ✓

XRF analysis.pdf
10.05 Kb
Transparent ✓

Labels

Add labels to be included in your certificate

Label
Export ✓

Buyer
Get started with finding your recipient.

Material
Define the information you want to add.

3 Information
Necessary information for the certificate.

4 Summary
Check all the information if it's correct.

Image 88. Adding labels to indicate the supply chain point (at Smelter for Export)

Usually at this point the exported materials are packed in a different way than using tags (as is the case on mine sites), but in the event there are details that have barcodes such as seals etc. you can use the barcode reader to add details (for more details see Section 7). Just to reiterate, the barcode reader comes with the mobile web version of Minespider that you can use to scan your tags by clicking on the marked icon (Note: you do not need to download an app. just go to <https://app.minespider.com/> in your browser like you would on the computer).

An additional thing that can bring value when coming to identifying the location is the **“Location”** button. This is very important as it indicates the right spot where the shipment is consolidated and from where the material will be shipped. Image 89 shows how this is done, where the coordinates are pre-filled automatically once access is granted (more details on this are also available in Section 7).

Create shipment certificate

Labels

Add labels to be included in your certificate

Label

Type here

Further Information

Add information to be included in your certificate

+ Add information

Location

+ Link entity certificate

Buyer

Get started with finding your recipient.

Material

Define the information you want to add

3

Information

Necessary information for the certificate.

4

Summary

Check all the information if it's correct.

Back

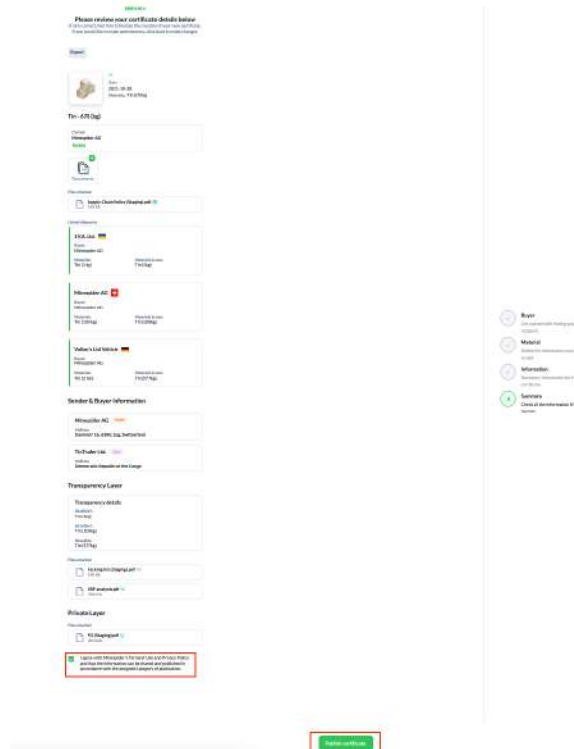
Proceed

Image 89. Adding GPS location

Once all the details for the shipment are added the next step is the confirmation of the data added so that the certificate can be published.

Step 4: Summary

This is where you review all the entered information and how the Certificate will look like. Once you are happy with the details you can check the box and **“Publish”** the certificate (Image 89). In case there are some changes that need to take place, you can always go **“Back”** and modify the details.



Please review your certificate details before publishing

Buyer

Material

Information

Sender & Buyer Information

Transparency Layer

Blockchain Layer

Publish

Image 90. Summary and confirmation of information for publishing the certificate on the blockchain

Here it is, your shipment certificate has been published. Scan the QR code to get more information and test it out (Image 91).



Image 91. Overview of the published shipment certificate

You have now finalised a shipment export certificate. You can export this document and share it with you clients or alternatively access the history tree from the shipment dashboard for a more visual representation of what your shipment originates from. These concludes our Mine to Smelter step-by-step guides and proposal on how to evidence your shipments on the Minespider blockchain. For more details or questions regarding our Chain of Custody tool, please contact your designated project manager.