



Fungi: The first ERC-20i Token With Native Inscriptions

Todd Stool
ToddStool.eth

Abstract. 'Inscriptions' refer to data written into transactions. Inscriptions can serve various purposes, including adding details to a transaction, sending messages, or attaching documents or files. ERC-20 tokens with inscriptions can have additional data attached, making each token unique and representing it as a piece of art, music, etc.

In the case of **Fungi**, each token amount has a unique seed containing data represented as a fungible and non-fungible (*at the same time*) art piece generated in real-time and hosted on the blockchain within a single modified new ERC-20i token format.

Mechanics. A unique 'seed' is generated on each buy, sell, or transfer of \$FUNGI, and a Fungi is created and attached to a wallet. Each Fungi has six (from 0 to 5) unique levels of size, shape, and color. Each level has its own metadata and its own color palette. The higher seed will attach the higher level to the wallet address. Fungi can be stable or dynamic.

Seeds are only integer numbers; decimals are not necessary. Integer numbers are whole numbers. These can be numbers without fractions or decimals like 1,2,3 and not 0.123 or 0.0123.

Dynamic means the Fungi will change its art and seed on each new buy/sell or transfer. It's possible to make it stable and keep it unchanged.

Stable means the Fungi will not change when trading or receiving extra tokens, *however, it will change on selling or a partial transfer, turning it back into a dynamic state.* To make it stable and save a unique seed and attached art, the owner must transfer the amount of tokens that were attached to the initial seed wallet to another wallet.

Example: Bob bought 15 tokens of \$FUNGI and a unique art was generated for him. He likes his Fungi and wants to send it to Alice so she can keep it safe. To do so, he has to send 15 tokens in one transaction to the wallet associated with Alice. Now Alice has Bob's Fungi, and when she buys tokens for herself, Bob's Fungi is unaffected. Now Alice holds 2 Fungis in her wallet: one is stable (Bob's), and another is dynamic and can change when Alice buys/sells or transfers tokens.

Note: When transferring tokens from one wallet to another, keep in mind that the dynamic mushroom tokens are transferred first (before those attached to the stable mushroom).

Seed. A seed is a unique number generated for a particular wallet on any type of integer(whole) numbers transaction.

ERC20i. ERC20i simply stands for ERC20 with inscription data. Inscriptions are encoded in the amount of the transfers of the token; each transaction is parsed and determined by the system as a unique seed number. That seed number is used to render image data.

The smart contract stores the shape coordinates, colors, and logic to produce a final SVG image. Each image is unique, stored on-chain, and generated in real-time based on a seed that equals the holder's \$FUNGI balance.

Each generated image has unique metadata attached to it, including:

- Background color
- Ground color
- Stem shape, stem color
- Cap shape, cap color
- Cap's pattern, if it exists, its color
- Level (from 0 to 5)

Colors are attached based on this logic: from many different colors on the lowest to more defined colors on the higher levels.

Note: 0 level is called "spore." Spores do not have a cap; they only have a small stem.

Example: Bob bought 9,000,000 \$FUNGI, and his seed equals 9000000. He will get this metadata:

- *Fungi level is 5*
- *Background Color #0f0c45*
- *Ground Color: #137d5a*
- *Stem Shape: 4*
- *Stem Color: #99ba5a*
- *Cap Shape: 3*
- *Cap Color: #974700*
- *Has Dots: no*
- *Dots Color: no*

Generating an image based on 9000000 seed.

Creating a background layer, assigning a color, and then combining it with a ground color.



Adding a stem layer and assigning a color.



Generating a final image: adding a cap to the previous layers and assigning a color.

