Binding Royaltys for ERC721

by granola

On Chain Royalties

By owning an NFT from a collection, one is bound to send ETH to transfer an NFT

All NFT transfers require ETH, breaking ERC721 standards to pay artists secondary royalties

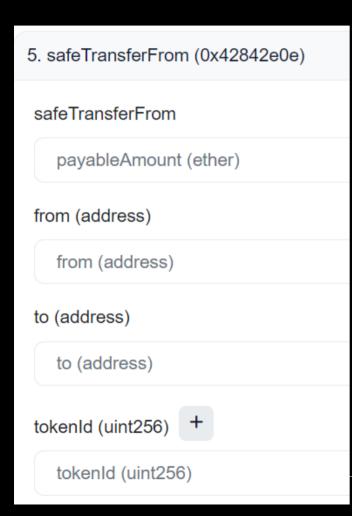# On Chain Royalties

Opensea breaks

Blur breaks

Any contract that does not use a payable version of safeTransferFrom breaks therefore enforcing royalties
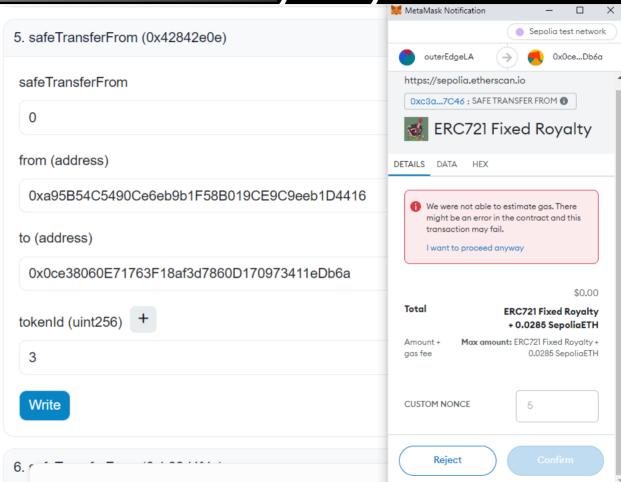
Disallowing Wrapping of NFTs stop subversion of royalty payments
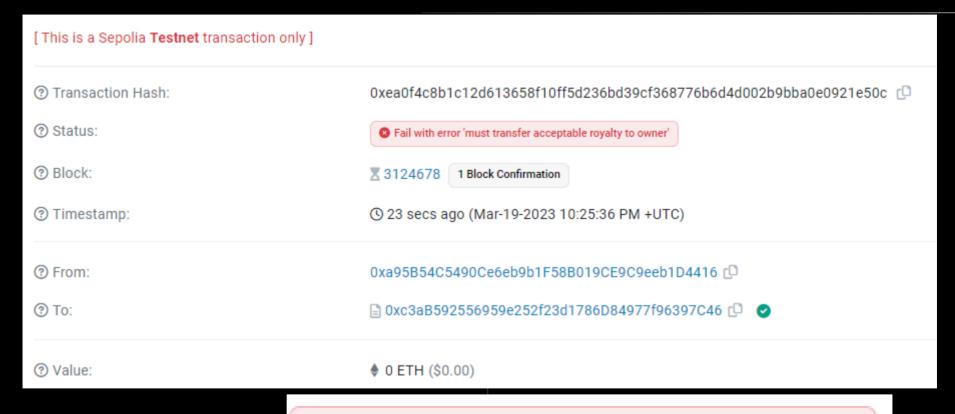
On Chain Royalties (solidity)

```solidity
/**
 * Override transfer function to enforce fixed unit royalty
 */

function safeTransferFrom(
    address from,
    address to,
    uint256 tokenId,
    bytes memory _data
) public payable override {
    require(_isApprovedOrOwner(_msgSender(), tokenId), "ERC721: transfer caller is not owner nor approved");

    require(!to.isContract(), "cant send to contract");
    require(msg.value >= royaltyPrice, "must transfer acceptable royalty to owner");

    (bool success, ) = owner().call{value: msg.value}("");
    require(success, "Transfer failed.");

    _safeTransfer(from, to, tokenId, _data);
}
```

Fail to Transfer – No Royalty Offered

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Fail to Transfer – No Royalty Offered

[This is a Sepolia **Testnet** transaction only]

⑦ Transaction Hash:	0xea0f4c8b1c12d613658f10ff5d236bd39cf368776b6d4d002b9bba0e0921e50c
⑦ Status:	⊗ Fail with error 'must transfer acceptable royalty to owner'
⑦ Block:	⧗ 3124678 1 Block Confirmation
⑦ Timestamp:	⏱ 23 secs ago (Mar-19-2023 10:25:36 PM +UTC)
⑦ From:	0xa95B54C5490Ce6eb9b1F58B019CE9C9eeb1D4416
⑦ To:	📄 0xc3aB592556959e252f23d1786D84977f96397C46 ✓
⑦ Value:	◆ 0 ETH ($0.00)

⊗ Fail with error 'must transfer acceptable royalty to owner'

Transfer Success – Royalty Paid

Transfer Success – Royalty Paid

⑦ Transaction Hash:	0x091a348a2be604f5d902442265cd0b6065d595867cb24ec0d0d815622fc9dddc
⑦ Status:	✅ Success
⑦ Block:	⧖ 3124666　4 Block Confirmations
⑦ Timestamp:	🕐 43 secs ago (Mar-19-2023 10:22:48 PM +UTC)
⑦ From:	0xa95B54C5490Ce6eb9b1F58B019CE9C9eeb1D4416 ⧉
⑦ Interacted With (To):	📄 0xc3aB592556959e252f23d1786D84977f96397C46 ⧉ ✅
	∟ Transfer **0.001 ETH** From 0xc3aB59...96397C46 To 0xa95B54...eb1D4416
⑦ ERC-721 Tokens Transferred:	🅽 ERC-721 Token ID [3] ◈ ERC721 Fixed...(ERC721...) From 0xa95B54...eb1D4416 To 0x0ce380...411eDb6a
⑦ Value:	♦ 0.001 ETH ($0.00)
⑦ Transaction Fee:	0.000112632000788424 ETH ($0.00)
⑦ Gas Price:	1.000000007 Gwei (0.000000001000000007 ETH)