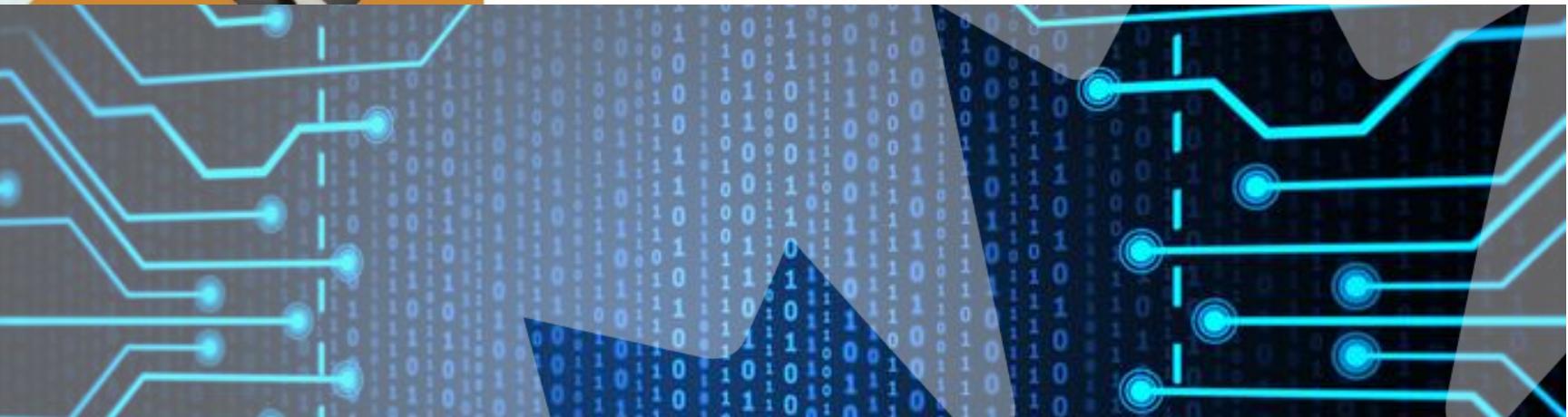




OECD International Academy for Tax Crime Investigation

*Anti-Money Laundering: Current Trends, Prosecutions,  
and the Challenges around Cryptocurrencies*



## Sanctioning, Freezing, and Asset Recovery

---

# Dealing with “Bad” Addresses

- **Sanctioning:** addresses may be judicially sanctioned and penalties may be imposed on individuals or entities interacting with them.
- **Freezing:** some tokens, including stablecoins, may be frozen inside bad actor's wallets if they are stolen.
- **Restitution:** frozen tokens may be burned and re-minted and returned to victims if the contract project cooperates.

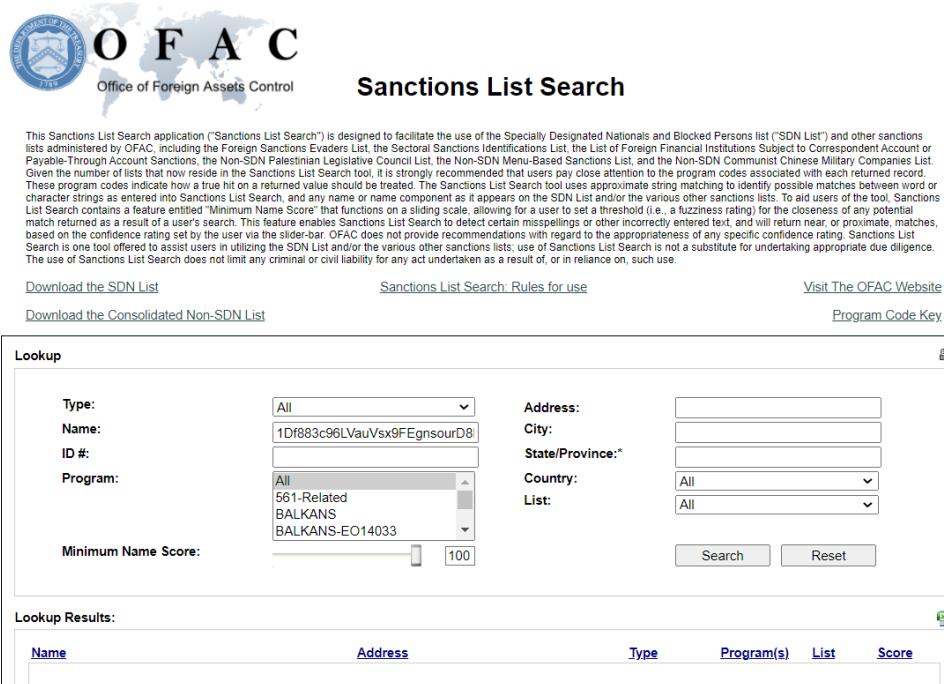
# SANCTIONING

# OFAC - US Office of Foreign Assets Control

- OFAC publishes lists of individuals and companies owned or controlled by, or acting for or on behalf of, targeted countries. It also lists individuals, groups, and entities, such as terrorists and narcotics traffickers designated under programs that are not country-specific.
- Sanctioned cryptocurrency addresses will be flagged in law enforcement tracing tools such as Chainalysis
- Exchanges and other money service businesses will typically blacklist the addresses.

# OFAC Sanctions List Tool

- <https://sanctionssearch.ofac.treas.gov/>
- Does not have a search field for digital currency addresses.



The screenshot shows the 'Sanctions List Search' application interface. At the top, there is a logo for the Office of Foreign Assets Control (OFAC) with the text 'DEPARTMENT OF THE TREASURY' and 'OFAC' above 'Office of Foreign Assets Control'. Below the logo, the title 'Sanctions List Search' is displayed. A detailed description of the tool's purpose is provided, stating it is designed to facilitate the use of various sanctions lists. It includes links for 'Download the SDN List', 'Sanctions List Search: Rules for use', 'Visit The OFAC Website', 'Download the Consolidated Non-SDN List', and 'Program Code Key'. The main interface features a 'Lookup' section with dropdown menus for 'Type' (All, 1Df883c96LvauVsx9FEgrnsourD8), 'Name' (1Df883c96LvauVsx9FEgrnsourD8), 'ID #' (All, 561-Related, BALKANS, BALKANS-EO14033), 'Program' (All, 561-Related, BALKANS, BALKANS-EO14033), 'Address' (City, State/Province, Country, List), and a 'Minimum Name Score' slider. Below the lookup section is a 'Lookup Results' table with columns: Name, Address, Type, Program(s), List, and Score. The table is currently empty.

# OFAC – Cryptocurrency Search

- Sanction list (including cryptocurrency addresses) can be downloaded as [txt](#) or [pdf](#)
- Downloaded list can be searched.



## OFFICE OF FOREIGN ASSETS CONTROL

### Specially Designated Nationals and Blocked Persons List

October 3, 2022

#### ALPHABETICAL LISTING OF SPECIALLY DESIGNATED NATIONALS AND BLOCKED PERSONS ("SDN List"):

This publication of Treasury's Office of Foreign Assets Control ("OFAC") is designed as a reference tool providing actual notice of actions by OFAC with respect to Specially Designated Nationals and other persons (which term includes both individuals and entities) whose property is blocked, to assist the public in complying with the various sanctions programs administered by OFAC. The latest changes to the SDN List may appear here prior to their publication in the

7 KARNES, Avenida Ciudad de Cali No. 15A-91, Local A06-07, Bogota, Colombia; Matricula Mercantil No 1978075 (Colombia) [SDNTK].  
7 MAKARA PHARY CO., LTD., Deaum Mien, Daem Mien, Ta Khmau, Kandal 8252, Cambodia; Company Number 00037307 (Cambodia) [GLOMAG] (Linked To: SOPHARY, Kim).  
7TH OF TIR (a.k.a. 7TH OF TIR COMPLEX; a.k.a. 7TH OF TIR INDUSTRIAL COMPLEX; a.k.a. 7TH OF TIR INDUSTRIES; a.k.a. MOJTAMAE SANATE HAFTOME TIR; a.k.a. SANAYE HAFTOME TIR; a.k.a. SEVENTH OF TIR), Mobarakeh Road Km 45, Isfahan, Iran; P.O. Box 81465-478, Isfahan, Iran; Additional Sanctions Information - Subject to Secondary Sanctions [NPWMD] [IFSR].  
7TH SENSE CREATION (a.k.a. SEVENTH SENSE COMPANY LIMITED), Thu Khi Tar Street, No.3 Bauk Htaw (15) Quarter, Yankin Township, Yangon, Burma; Registration Number 119554144 (Burma) issued 03 Apr a.k.a. SANAYF HAFTOME TIR; a.k.a.

KARASAVIDI, Dmitriy (a.k.a. KARASAVIDI, Dmitrii), Moscow, Russia; DOB 09 Jul 1985; Email Address 2000@911.af; alt. Email Address dm.karasavi@yandex.ru; Gender Male; Digital Currency Address - XBT 1Q6saNmqKkyFB9mFR68Ck8F7Dp7dTopF2W; alt. Digital Currency Address - XBT 1DDA93oZPn7wte2eR1ABwcFoxUFxkKMwCf; Digital Currency Address - ETH 0xd882fcf20f52f2599d84b8e8d58c7fb62cfe344b; Digital Currency Address - XMR 5be5543ff73456ab9f2d207887e2af87322c651ea1a873c5b25b7ffae456c320; Secondary sanctions risk: Ukraine-/Russia-Related Sanctions Regulations, 31 CFR 589.201; Digital Currency Address - LTC LNwgtMxcKUQ51dw7bQL1yPQjBVZh6QEqsD; Digital Currency Address - ZEC t1g7wowvQ8gn2v8jrU1biyJ26sieNqNsBJy; Digital Currency Address - DASH XnPFSRWTaSgiVauosEwQ6dEitGYXgwznz2; Digital Currency Address - BTG GPwg61XoHqQPNmAucFACuQ5H9sGCDv9TpS; Digital Currency Address - ETC 0xd882fcf20f52f2599d84b8e8d58c7fb62cfe344b; Passport 75 5276391 (Russia) expires 29 Jun 2027 (individual) [CYBER2].

<https://www.treasury.gov/ofac/downloads/sdnlist.txt>

<https://www.treasury.gov/ofac/downloads/sdnlist.pdf>

# Exercise – OFAC Search

Download the OFAC Sanctions List:

<https://www.treasury.gov/ofac/downloads/sdnlist.txt>

1. Who do the following sanctioned addresses belong to and what cryptocurrency is listed?
  - **0x4736dCf1b7A3d580672CcE6E7c65cd5cc9cFBa9D**
  - **134r8iHv69xdT6p5qVKTsHrcUEuBVZAyak**
  - **0x19aa5fe80d33a56d56c78e82ea5e50e5d80b4dff**

<https://www.treasury.gov/ofac/downloads/sdnlist.txt>

<https://www.treasury.gov/ofac/downloads/sdnlist.pdf>

# Chainalysis: Sanctions Screening Tool

## Free Sanction Screening Tools for The Cryptocurrency Industry

As countries around the world continue to leverage economic sanctions in response to Russia's invasion of Ukraine, decentralized web3 groups like DEXs, DeFi platforms, DAOs, and DApp developers are searching for lightweight tools to help them and their customers comply with sanctions policies.

Chainalysis is offering sanctions wallet screening tools for the cryptocurrency industry free of charge. These solutions offer a simple way to quickly check if an address is on a sanctions list before allowing it to connect with their service:

1. Our free crypto sanctions screening API is now available. Fill out the form to receive access.
2. Chainalysis oracle for sanctions screening: [click here to learn more](#).

<https://go.chainalysis.com/crypto-sanctions-screening.html>

# Chainalysis oracle for sanctions screening

The Chainalysis oracle is a smart contract that validates if a cryptocurrency wallet address has been included in a sanctions designation. The smart contract is maintained by Chainalysis on a variety of popular blockchains and will be regularly updated to reflect the latest sanctions designations listed on economic/trade embargo lists from organizations including the US, EU, or UN. The smart contract is available for anyone to use and does not require a customer relationship with Chainalysis.

## Defining Sanctions Data

Sanctioned entities refer to entities listed on economic/trade embargo lists, such as by the US, EU, or UN, with which anyone subject to those jurisdictions is prohibited from dealing. Currently, this includes the Specially Designated Nationals (SDN) list of the US Department of the Treasury's [Office of Foreign Assets Control \(OFAC\)](#). While we will be taking reasonable measures to keep the sanctions oracle up-to-date, Chainalysis cannot guarantee the accuracy, timeliness, suitability, or validity of the data.

## Compatible networks

Currently, the Chainalysis oracle is available on the Ethereum network as well as the following EVM-compatible networks (click the links to view the Chainalysis oracle on each network):

- Ethereum: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- Polygon: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- BNB Smart Chain: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- Avalanche: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- Optimism: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- Arbitrum: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)
- Fantom: [0x40c57923924b5c5c5455c48d93317139addac8fb](#)
- Celo: [0x40C57923924B5c5c5455c48D93317139ADDaC8fb](#)

Contact [chainalysis-oracle-support@chainalysis.com](mailto:chainalysis-oracle-support@chainalysis.com) to provide feedback or ask us any questions.

# FREEZING

# Freezing Cryptocurrency

- **Layer 1 tokens cannot be frozen if a user controls their own keys**
  - Bitcoin
  - Litecoin
  - Ether
  - Doge
  - Monero
  - Etc.

# Freezing on a Platform

- **Centralized platforms such as cryptocurrency exchanges are able to freeze accounts and the funds they contain.**
- “Not your keys, not your coins...”
- Court orders are required (e.g. Mareva Injunction).
- Many exchanges will freeze temporarily while law enforcement seek a court order.

# Freezing via Smart Contracts

- **Cryptocurrency tokens** (e.g. Tether, USDC) may be frozen at a suspect's address if the token smart contract permits it.
- **NFTs** may be frozen at a suspect's address if the token smart contract permits it.

# Freezing Fungible Tokens

- Some cryptocurrency token projects are able to block specific addresses from sending their tokens.
- This effectively freezes the assets at the address.
- Frozen assets cannot be recovered.
- Freezing a specific type of token in an address currently freezes any co-mingled tokens of the same type.

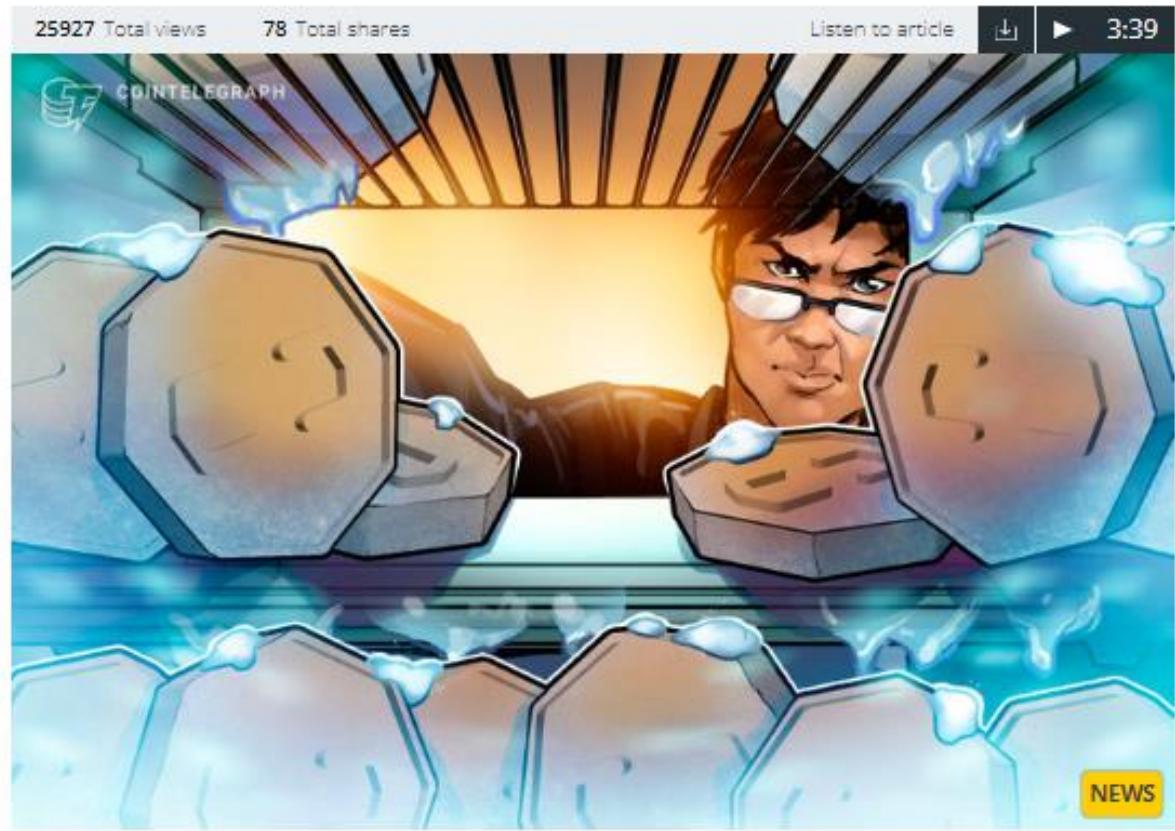
# Freezing Non-Fungible Tokens

- Some NFT token projects are able to block addresses from sending their tokens.
  - This is done by coding blacklisted addresses from interacting with their smart contracts.
- Blacklisting an address freezes the asset at an address.
- Frozen assets cannot be recovered until the address is un-frozen.
- Freezing a specific type of token in an address freezes any co-mingled tokens of the same type.

# Can you freeze NFTs?

## OpenSea freezes \$2.2M of stolen Bored Apes

Art gallery owner Todd Kramer had his valuable NFT collection stolen from his hot wallet yesterday, so OpenSea froze the stolen assets worth about \$2.2 million.



# OpenSea & Freezing

**“We do not have the power to freeze or delist NFTs** that exist on these blockchains, however we do disable the ability to use OpenSea to buy or sell stolen items.”

“It’s an article of faith that crypto transactions are irreversible. But there’s nothing inherent in blockchain technology that requires that, and **some crypto projects already allow reversals.**”

# “Code is Law”

- If the ability to freeze a token is coded into its smart contract, then it can be frozen or destroyed.
- Some tokens are programmed so that they may be frozen, even burned.
- Most tokens are not programmed to be frozen.

# Centralization Facilitates Freezing and Restitution

- If you control the blockchain (i.e. the ledger of account balances) or the smart contract for a token, you can freeze, burn or return tokens.

## 1. The DAO Hack

- A hard fork rolled back the Ethereum ledger to before the hack. This effectively returned the stolen funds.

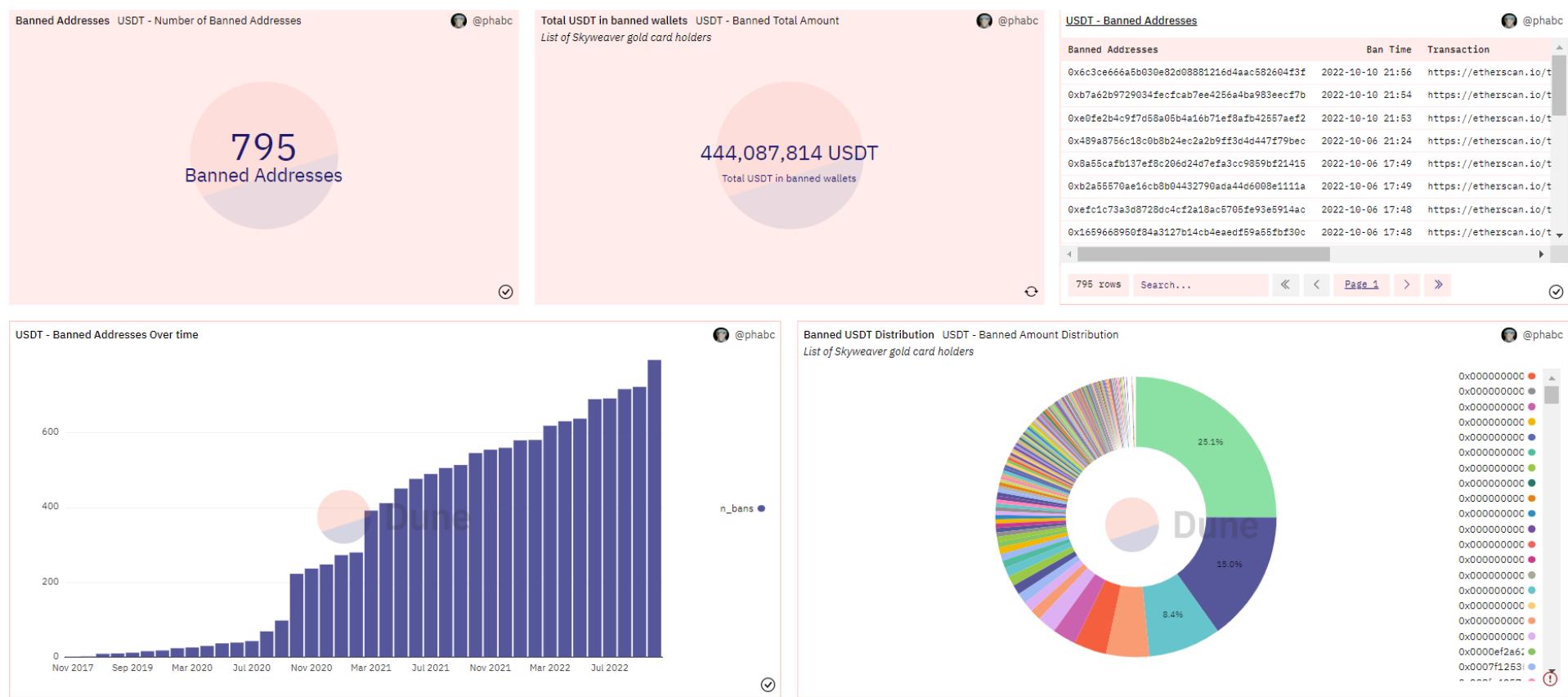
## 2. Tether

- As a centralized company, Tether is able to blacklist addresses it believes are involved in crime, money laundering or for any other reason it chooses.

# Exchanges freeze sanctioned accounts and addresses

- Most Virtual Asset Service Providers will proactively freeze or terminate sanctioned accounts
  - **Binance freezes accounts** of individuals (e.g. Russians) targeted by international sanctions.
  - **Coinbase terminates accounts** of sanctioned individuals.

# FREEZING TETHER (USDT)



<https://dune.com/phabc/usdt--banned-addresses>

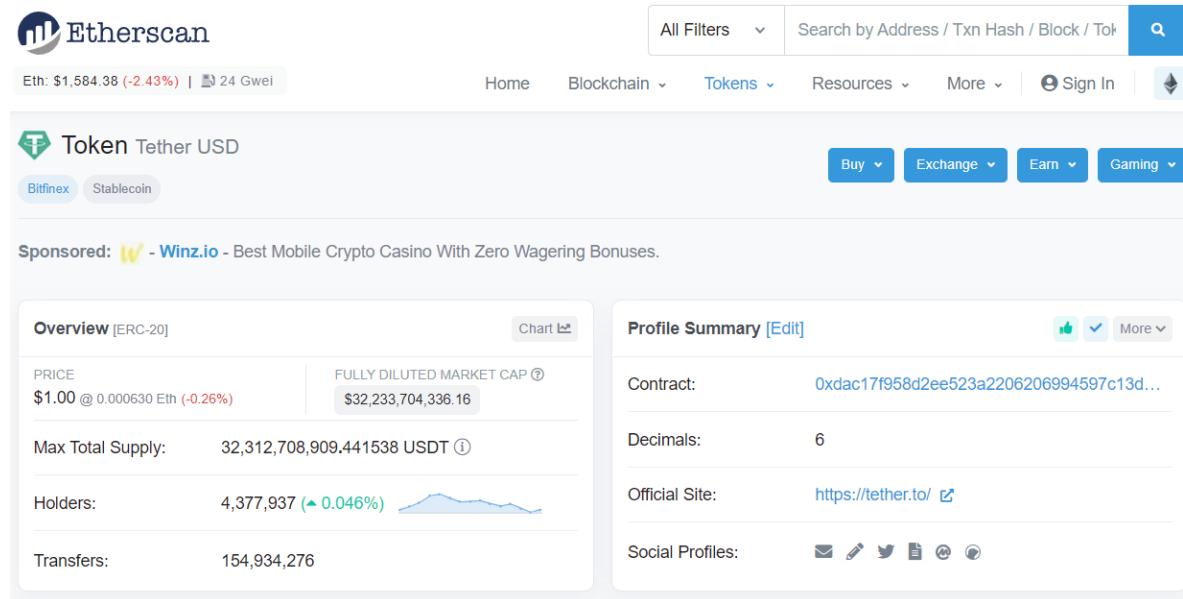
# Bitfinex can Blacklist Tether

- Tether Limited is owned by the Hong Kong-based company iFinex Inc., which also owns the Bitfinex cryptocurrency exchange.

## USDT Blacklist

BitFinex MultiSig (0xC6CDE7C39eB2f0F0095F41570af89eFC2C1Ea828) has the ability to call `addToBlacklist` on the USDT contract to prevent an address from moving their owned USDT.

# The Tether (USDT) Smart Contract can “destroy” blacklisted funds



Etherscan

Eth: \$1,584.38 (-2.43%) | 24 Gwei

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Bitfinex Stablecoin

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**Overview [ERC-20]**

PRICE \$1.00 @ 0.000630 Eth (-0.26%)	FULLY DILUTED MARKET CAP \$32,233,704,336.16
Max Total Supply:	32,312,708,909,441,538 USDT
Holders:	4,377,937 (▲ 0.046%)
Transfers:	154,934,276

**Profile Summary [Edit]**

Contract:	0xdac17f958d2ee523a2206206994597c13d...
Decimals:	6
Official Site:	<a href="https://tether.to/">https://tether.to/</a>
Social Profiles:	<a href="#">Email</a> <a href="#">Edit</a> <a href="#">Twitter</a> <a href="#">Discord</a> <a href="#">Reddit</a> <a href="#">GitHub</a>

```
291 function destroyBlackFunds (address _blacklistedUser) public onlyOwner {  
292     require(isBlacklisted[_blacklistedUser]);  
293     uint dirtyFunds = balanceOf(_blacklistedUser);  
294     balances[_blacklistedUser] = 0;  
295     _totalSupply -= dirtyFunds;  
296     DestroyedBlackFunds(_blacklistedUser, dirtyFunds);  
297 }
```

# The Tether (USDT) Smart Contract can blacklist and destroy funds

GitHub Gist  All gists Back to GitHub

RideSolo / USDT.sol Secret

Last active 4 days ago

[Code](#) [-Revisions 2](#) [Stars](#)

```
281     function addBlackList (address _evilUser) public onlyOwner {
282         isBlackListed[_evilUser] = true;
283         AddedBlackList(_evilUser);
284     }
285
286     function removeBlackList (address _clearedUser) public onlyOwner {
287         isBlackListed[_clearedUser] = false;
288         RemovedBlackList(_clearedUser);
289     }
290
291     function destroyBlackFunds (address _blackListedUser) public onlyOwner {
292         require(isBlackListed[_blackListedUser]);
293         uint dirtyFunds = balanceOf(_blackListedUser);
294         balances[_blackListedUser] = 0;
295         _totalSupply -= dirtyFunds;
296         DestroyedBlackFunds(_blackListedUser, dirtyFunds);
297     }
```

<https://gist.github.com/RideSolo/24c79eb34b565ade477ec89c2af49a5b#file-usdt-sol-L291>

# FREEZING USDC

# USDC Actively Blacklists Addresses

## Circle 'blacklists' all Tornado Cash ETH addresses effectively freezing USDC

Circle's USDC has "blacklisted" all Ethereum addresses owned by Tornado Cash listed in the US Treasury Department's sanction against the protocol.



Liam 'Akiba' Wright [Twitter](#) [LinkedIn](#) [Email](#)

Aug. 8, 2022 at 8:44 pm UTC

1 min read

Updated: August 9, 2022 at 1:50 am

<https://cryptoslate.com/circle-blacklists-all-tornado-cash-eth-addresses-effectively-freezing-usdc/>

# USDC Banned Addresses

← → ⌂ dune.com/phabc/usdc-banned-addresses

Search... Discover Favorites My Creations ...

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45 ⭐ Fork Share

@phabc / USDC Banned Addresses

Total USDC in banned wallets USDC - Banned Total Amount @phabc

4,098,838 USDC Total USDC in banned wallets

Banned Addresses USDC - Number of Banned Addresses @phabc

82 Banned Addresses

USDC - Banned Addresses @phabc

Banned Addresses	Ban Time	Trans
d93a0c5c4d399dc5f67b67cd80d16a7bb574915	2022-08-12 22:27	https
ca0840578f57fe71599d29375e16783424023357	2022-08-08 17:00	https
905b63fff465b0ffbf41dea908ceb12478ec7601	2022-08-08 17:00	https
bb93e510bbcd0b7beb5a853875f9ec60275cf498	2022-08-08 16:25	https
178169b423a011fff22b9e3f3abes13414ddd0f1	2022-08-08 16:25	https
03893a7c7463ae47d46bt7f091665f1893656003	2022-08-08 16:25	https

82 rows Search... Page 1

USDC - Banned Addresses Over time @phabc

Banned USDC Holders USDC - Banned Amount Distribution @phabc

0x029c2c986  
0x06caa9a5fc  
0x098b716b6  
0x19a5fe80  
0x29875bd49  
0x2d637066  
0x2f389ce8b  
0x308ed4b7  
0x35663b9e6  
0x461270bd0  
0x4736dcf1b  
0x5eb95f30b  
0x67d40ee1a  
0x6acdffa02c  
0x6f1ca141a  
0x722122df1  
0x858942731  
0x9ff43bd965  
0xaaa5f7c7e1  
0xbfd88175e  
0xd90e2f925  
0xd90e2f925

# USDC Smart Contract Code

GitHub Gist  All gists Back to GitHub

Instantly share code,

 chappjc / usdc.sol

Created 2 years ago

[Code](#) [Revisions 1](#)

usdc solidity contracts

[usdc.sol](#)

```
1  /**
2   *Submitted for verification at Etherscan.io on 2020-08-20
3   */
4
5  // File: @openzeppelin/contracts/math/SafeMath.sol
6
7  // License: MIT
8
9  pragma solidity ^0.6.0;
```

527 `pragma solidity 0.6.12;`  
528  
529 `/**`  
530  `* @title Blacklistable Token`  
531  `* @dev Allows accounts to be blacklisted by a "blacklister" role`  
532  `*/`  
533 `contract Blacklistable is Ownable {`  
534  `address public blacklister;`  
535  `mapping(address => bool) internal blacklisted;`  
536  
537  `event Blacklisted(address indexed _account);`  
538  `event UnBlacklisted(address indexed _account);`

# USDC Blacklisting Policy

- The Centre Consortium (“Centre”) has the ability to block individual Ethereum Blockchain addresses from sending and receiving US Dollar Coins (“USDC”).
- When an address is blacklisted, it can no longer receive USDC and all of the USDC controlled by that address is blocked and cannot be transferred on-chain.
- It is not possible to blacklist individual USDC tokens.

# USDC Blacklisting Conditions

1. Where Centre determines, in its sole discretion, that failure to grant a blacklisting request presents a threat to the security, integrity, or reliability of the USDC Network.
2. To comply with a law, regulation, or legal order from a duly recognized US authorized authority, US court of competent jurisdiction, or other governmental authority with jurisdiction over Centre.

[https://www.centre.io/hubfs/PDF/Centre\\_Blacklisting\\_Policy\\_20200512.pdf](https://www.centre.io/hubfs/PDF/Centre_Blacklisting_Policy_20200512.pdf)

# RESTITUTION?

# Seizing or Returning Assets

- Frozen coins may be re-minted and handed over to victims or to law enforcement.
- Asset holders may be convinced to return NFTs or other assets.
- Private keys of suspects may be seized and used to return assets.

# The future? ERC-20R & ERC-721R

1. Victim requests a freeze on the stolen funds.
2. Judges accept or deny freeze request.
3. Freeze is executed.
  - Any amount over the frozen amount can be spent.
4. Trial.
5. Reversal, if applicable.