



METATRUST

Draft  
Security Assessment for  
**28-2021-09-sushimiso  
(10K-FLP) (1Positive-  
FD) (StaticFail)**

July 23, 2023

## Executive Summary

Overview			
Project Name	28-2021-09-sushimiso (1OK-FLP) (1Positive-FD) (StaticFail)		
Codebase URL	https://github.com/daoyuan14/2021-09-sushimiso		
Scan Engine	AI Analyzer		
Scan Time	2023/07/23 22:21:20		
Commit Id	dd9cae6		






  

Total			
Critical Issues	0		
High risk Issues	2		
Medium risk Issues	0		
Low risk Issues	0		
Informational Issues	0		

Critical Issues		The issue can cause large economic losses, large-scale data disorder, loss of control of authority management, failure of key functions, or indirectly affect the correct operation of other smart contracts interacting with it.
High Risk Issues		The issue puts a large number of users' sensitive information at risk or is reasonably likely to lead to catastrophic impacts on clients' reputations or serious financial implications for clients and users.
Medium Risk Issues		The issue puts a subset of users' sensitive information at risk, would be detrimental to the client's reputation if exploited, or is reasonably likely to lead to moderate financial impact.
Low Risk Issues		The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low-impact in view of the client's business circumstances.
Informational Issue		The issue does not pose an immediate risk but is relevant to security best practices or Defence in Depth.



	Critical Issues	0%	0
	High risk Issues	100%	2
	Medium risk Issues	0%	0
	Low risk Issues	0%	0
	Informational Issues	0%	0

## Summary of Findings

MetaScan security assessment was performed on **July 23, 2023 22:21:20** on project **28-2021-09-sushimiso (10K-FLP) (1Positive-FD) (StaticFail)** with the repository **<https://github.com/daoyuan14/2021-09-sushimiso>** on branch **default branch**. The assessment was carried out by scanning the project's codebase using the scan engine **AI Analyzer**. There are in total **2** vulnerabilities / security risks discovered during the scanning session, among which **0** critical vulnerabilities, **2** high risk vulnerabilities, **0** medium risk vulnerabilities, **0** low risk vulnerabilities, **0** informational issues.

ID	Description	Severity
MSA-001	MWE-204: Unsafe First Deposit	High risk
MSA-002	MWE-200: Insecure LP Token Value Calculation	High risk



## Findings

### Critical (0)

No Critical vulnerabilities found here

### High risk (2)

## 1. MWE-204: Unsafe First Deposit

 High risk Security Analyzer

First depositor can break minting of shares or drain the liquidity of all users.

### File(s) Affected

contracts/Farms/MISOMasterChef.sol #257-275

```
257     function updatePool(uint256 _pid) public {
258         PoolInfo storage pool = poolInfo[_pid];
259         if (block.number <= pool.lastRewardBlock) {
260             return;
261         }
262         uint256 lpSupply = pool.lpToken.balanceOf(address(this));
263         if (lpSupply == 0) {
264             pool.lastRewardBlock = block.number;
265             return;
266         }
267         uint256 multiplier = getMultiplier(pool.lastRewardBlock, block.number);
268         uint256 rewardsAccum = multiplier.mul(rewardsPerBlock).mul(pool.allocPoint).div(totalAllocPoint);
269         if (devPercentage > 0) {
270             tips = tips.add(rewardsAccum.mul(devPercentage).div(1000));
271         }
272         totalRewardDebt = totalRewardDebt.add(rewardsAccum);
273         pool.accRewardsPerShare = pool.accRewardsPerShare.add(rewardsAccum.mul(1e12).div(lpSupply));
274         pool.lastRewardBlock = block.number;
275     }
```



contracts/Farms/MISOMasterChef.sol #278-295

```
278     function deposit(uint256 _pid, uint256 _amount) public {
279         PoolInfo storage pool = poolInfo[_pid];
280         UserInfo storage user = userInfo[_pid][msg.sender];
281         updatePool(_pid);
282         if (user.amount > 0) {
283             uint256 pending = user.amount.mul(pool.accRewardsPerShare).div(1e12).sub(user.rewardDebt);
284             if(pending > 0) {
285                 totalRewardDebt = totalRewardDebt.sub(pending);
286                 safeRewardsTransfer(msg.sender, pending);
287             }
288         }
289         if(_amount > 0) {
290             pool.lpToken.safeTransferFrom(address(msg.sender), address(this), _amount);
291             user.amount = user.amount.add(_amount);
292         }
293         user.rewardDebt = user.amount.mul(pool.accRewardsPerShare).div(1e12);
294         emit Deposit(msg.sender, _pid, _amount);
295     }
```

### Recommendation

When totalSupply() == 0, send the first min liquidity LP tokens to the zero address to enable share dilution.

## 2. MWE-200: Insecure LP Token Value Calculation

 High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

### File(s) Affected

contracts/Helper/CalculationsSushiswap.sol #209-221

```
209     function getLpTokenPriceUsdc(address tokenAddress)
210     public
211     view
212     returns (uint256)
213     {
214         Pair pair = Pair(tokenAddress);
215         uint256 totalLiquidity = getLpTokenTotalLiquidityUsdc(tokenAddress);
216         uint256 totalSupply = pair.totalSupply();
217         uint8 pairDecimals = pair.decimals();
218         uint256 pricePerLpTokenUsdc =
219             (totalLiquidity * 10**pairDecimals) / totalSupply;
220         return pricePerLpTokenUsdc;
221     }
```

### Recommendation

Do not use AMM pool or custom liquidity calculation to calculate LP token value/price.

## Medium risk (0)

No Medium risk vulnerabilities found here

## Low risk (0)

No Low risk vulnerabilities found here

## Informational (0)

No Informational vulnerabilities found here

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