# Ash and Potash from Slop (Concentrated Spent Wash) Firing

Ash and $K_2O$ recovered per day from burning concentrated spent wash, from the concentrate rate, its solids, the ash share of solids and the $K_2O$ content of the ash.

**Method:** Mass balance

## Input parameters

Unit system: SI

| Parameter | Value | Unit |
|---|---|---|
| Concentrate fired | 230.00 | t/d |
| Solids in concentrate | 55.000 | % |
| Ash % of solids | 28.000 | % |
| $K_2O$ % of ash | 30.000 | % |

## Calculated results

| Parameter | Value | Unit |
|---|---|---|
| Ash | 35.420 | t/d |
| $K_2O$ in ash | 10.626 | t/d |

**Notes for this case**

- Potassium-rich ash fouls heat-transfer surfaces: soot blowing and gas velocities matter in slop-fired boilers.
- All ash is taken as recovered: fly-ash carry-over and support-fuel ash are not separated.

## Formula and method

$$\dot{m}_a = \dot{m}_c x a, \quad \dot{m}_K = \dot{m}_a k$$

### Variables

| | | |
|---|---|---|
| $\dot{m}_c$ | Concentrate fired | kg/s |
| $x$ | Solids in concentrate | - |
| $a$ | Ash % of solids | - |
| $k$ | $K_2O$ % of ash | - |
| $\dot{m}_a$ | Ash | kg/s |
| $\dot{m}_K$ | $K_2O$ in ash | kg/s |

### Method and standards

Mass balance.

### Assumptions and limits

- All ash recovered as saleable ash. Fly ash carried over with the flue gas, and ash from any support fuel (coal or bagasse fired with the slop), are not separated: deduct the carry-over and keep support-fuel ash apart.

### References

- Mass balance

## Report details

| | |
|---|---|
| Report reference | FCC-5HS7-E3EM (the same inputs always give the same reference) |
| Generated | 17 November 2026, 19:37 UTC |
| Calculator | Ash and Potash from Slop (Concentrated Spent Wash) Firing |
| Method last reviewed | 13 November 2026 |
| Software release | FireCAD Calc, release of 17 November 2026 |
| Release checks | 2 reference cases of this calculator, computed independently, are checked on every release |

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/sugar-ethanol/spent-wash-zld/potash-from-slop-ash

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.