CASE STUDY

EASYPURE

Gravity-based bacteriological treatment for cutting fluid application

Application

Recycling of cutting fluid for aluminum machining

Volume of liquid to be recycled

1 m³/day on average

Objective

Stabilization and reduction of bacterial concentration

The EASYPURE unit has been specially designed for the treatment of cutting fluids.

The process relies on 4 successive steps: settling, filtration, oil removal, and UV treatment

This final step, performed in a continuous loop, uses a module powered by a circulation pump (2 m³/h) and equipped with two 48 W lamps providing a germicidal action that prevents bacterial growth and stabilizes the emulsion.

Results

8 to 10 months
Return on investment

3 years Reuse of oil without draining

65 m³ Non-disposed fluid

8000h Before UV lamp replacement

Cutting fluid savings

Reduces the cost of reprocessing used fluid, reduces the purchase of new fluid, increases the life of the fluid used.

Stabilized emulsion

SIEBEC filtration ensures the elimination of particles and lubricating oils, while preventing bacterial growth.

Odor elimination

The UV treatment and efficient separation of tramp oils prevent bacterial proliferation, thereby eliminating unpleasant odors from the fluid.

1 Waste fluid storage

Chip juices and used cutting fluids are stored in a 1000 l IBC. The fluid is then automatically transferred to the station in 500 l batches.

2 Settling

The fluid is transferred to the separation tank. Lubrication oils are recovered in module (3b) and sludge and chips are transferred to a BigBag for disposal (3a).

3 Recovery modules

Pollutants can be recovered on different modules.

3a. Sludge recovery
Sludge recovery in filter bag mounted on trolley.

3b. Oil recovery
Oil recovery in drum mounted on trolley

WASTE

4 Finishing filtration & oil removal

Once freed from sludge, chips and floating oils, the fluid receives finishing treatment to refine filtration and remove fine particles and traces of lubricating oil.

5 UV treatment

The regenerated fluid is stored in the final IBC where it receives continuous UV treatment to prevent any bacterial growth.

NANOREACTOR
High UV radiation

6 Regenerated fluid

The fully regenerated fluid is ready to be transferred to the machine tool lubricant tank for a new life.

REUSE