

Troublesome Waste Streams Machine Shop Coolants

Scott Leighton Remediation and Waste Management

Waste Coolant Generation

- Waste coolant is generated by skimming the tramp oil off the coolant in each machine's coolant tank.
- Waste metals (chips, shavings, turnings, swarf) are mechanically removed from individual machines.

Typical Waste Coolant/Lubricant Characteristics

- 3 phases
- Top phase consists of lubricants (often called tramp oil) used in and on the machines
- Middle phase consists of coolant used to flood parts while being manufactured (commonly a water mixture).
- Bottom phase is waste metal particulate

When Are Coolants Hazardous?

Coolants and Tramp Oil are suspect if used on:

- Hardened, chrome plated, and stainless metals (especially grinding/honing) for chromium
- Steels and brasses for lead
- Specialty and aerospace parts for chromium

Waste Metal Recovery

Waste metal is frequently mechanically removed from the coolant tanks and chip beds in each machine.



Separating Coolant/Oil From Waste Metal



Coolant and tramp oil are drained from waste metal and collected before the metal is shipped for recycling. Smaller shops gravity drain the chips.

Separating Coolant/Oil From Waste Metal



Another chip draining set up. These chips were too large to spin in a centrifuge.



Separating Coolant/Oil From Waste Metal

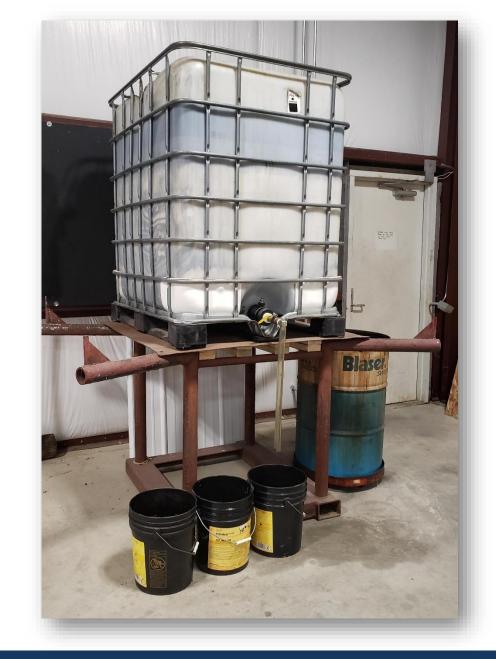
Chip/shaving centrifuge.





Coolant Recycling

Skimmed tramp oil is often allowed to separate and coolant is reclaimed for reuse.





Waste Coolant

Coolant eventually becomes rancid and is transferred into drums for disposal.





Other wastes generated from coolant



Coolant and tramp oil contaminated clean-up debris and waste floor washing liquids should be tested.



Contact:

- Maine's Hazardous Waste Management Unit
- https://www.maine.gov/dep/waste/hazardouswa ste/index.html

www.maine.gov/dep

