# List of Burnables for SmartAsh

## Absorbent Types
- Cellulose base types
- Polypropylene & cotton mix
- Saw dust
- Cotton
- Corn cobs
- Peat moss

## Hydrocarbons
- All types of crude oils
- Used motor oils
- Lubricating greases
- Diesel fuels #1 and #2
- Jet fuels (flash point above 100°F)
- Waste oils
- Transmission oils
- Hydraulic oils
- Kerosene

- See (appendix 1) for disposal of above liquids

## Filters
- Spin on and cartridge oil filters from cars, trucks, and heavy equipment
- Air filters of all types
- Poly & fiberglass filters
- Natural gas pipeline filters (glycol filters)

## Paper Products
- Newspapers
- Cardboards
- Computer paper
- Office waste
- Fast food paper wastes
- Sensitive documents

## Wood Products
- Saw dust
- Scrap at construction sites
- Shipping pallets
- Tree limbs & leaves
- Any type of wood product

## Plastics
This unit will incinerate a wide variety of plastics. The volatile emissions emitted by these types of material are not acceptable in the permitting requirements.

## Miscellaneous
- Clothing
- Oily rags
- Gloves
- Packaging material
Helpful Hints for Burning Materials in SmartAsh
Section 1 – Absorbent Types

*Cellulose*

These types of absorbents burn very well. They burn clean and leave very little ash.

*100% Cotton*

These types also burn well. Some types absorb water as well as hydrocarbons so the moisture content must be low for a clean burn.

*Polypropylene & Cotton Mix*

This material will repel water commonly so moisture content is not a problem. Some states will only allow 20% by volume of poly products to be incinerated.

*Corn Cobs*

This material does very well if it is not overly saturated with fluid.

*Peat Moss*

This is a very hot clean burning absorbent that works well when it absorbs diesel or oils.

All of the above items work well with SmartAsh. Their burning characteristics are the same. When burning these materials, lining the bottom of the drum with clean dry absorbents is helpful. This will catch any fluids that leach out during operation of the unit. Always load the drum 2/3 full (do not overfill) and add a proper amount (6 to 10 pages) of newspaper to start the incineration process. Light the newspaper, reinstall the lid, and then adjust the air flow to the run position. The SmartAsh unit will, on average, incinerate 50 lbs per hour. The burn time of the unit will depend on the absorbent type and volume loaded in the drum.
Section 2 – Hydrocarbons (oils)

**Crude Oils**
When mixed with Cellulose, Cotton, Poly Cotton mixes and Peat Moss, the absorbents burn extremely hot and clean. Sometimes the lid assembly and drum will glow red from the extreme heat. (Do not be alarmed – this is common with these types of fuels.)

**Used Motor Oils, Waste Oils**
When mixed with Cellulose, Cotton, Poly and Cotton mixes, the absorbents will burn hot and clean.

**Transmission, Hydraulic (drive train oils)**
The operator can mix these oils with Cellulose, Cotton, Polycotton mixes and Peat Moss to obtain best results for a clean burn.

**Lubricating Greases**
Corn Cob and Saw Dust along with Cellulose absorbents work best with greases. The operator must thoroughly mix the absorbent with the grease. The operator must line the bottom of the drum with clean dry absorbents to catch and absorb any liquids formed while the unit is in operation.

**Diesel fuels 1 and 2, Kerosene**
Cellulose, Cotton, Polycotton and Peat Moss absorbents have best results with these fuels. Diesel fuels burn very hot and clean.

**Jet Fuels (Flash point above 100°F)**
These fuels burn with similar characteristics as diesel fuels and kerosene. The operator can handle these fuels the same as diesel fuels and kerosene.

All of the above fuels must be absorbed in a burnable type of absorbent, preferably the ones mentioned in section 1. Materials to be incinerated must have a flash point of above 100°F. The above fuels all burn with similar characteristics. These fuels will burn very hot and typically very clean, depending on the type and amount of absorbent used. The absorbent must not be overly saturated with fuels. This will cause smoking during operation of the unit. One pound of absorbent per pound of fluid is a safe ratio for a clean burn.
Section 3 – Filters

Spin on Filters
These types of filters need a fuel source to properly incinerate the oils and the internal parts. Burning of these types of filters is best achieved by burning with a load of used oily absorbents or wood products. These products burn very hot and will achieve the best results. After your burn is complete, the steel canister from the filter is all that remains. This can be disposed of in landfills or recycled.

Vehicle Air Filters
The incineration of these types is simple. Since most of these are paper-based and will sustain a flame of their own, an ample amount of newspapers are all that is required to start the burn process.

Ventilation Filters (Poly, Fiberglass)
These types of filters require the same procedure as vehicle filters. An ample amount of newspaper is all that is required for incineration. These filters will sustain a flame of their own for the process. When burning fiberglass filters, the process is the same, only the ash will differ. The ashes from this material will be fist sized clumps instead of a powder.

Natural Gas Pipeline Filters (glycol filters)
These filters are long (36") and have a narrow diameter. Filters of this type will burn very hot. The fibers of the filters are impregnated with natural gas. An ample supply of newspapers is all that is required to start and sustain the burn process.
Section 4 – Paper Products

Newspapers, Office Wastes

Stacks of newspapers, catalogs & magazines do not work well. The lack of air flow that can be generated around and through the paper stacks results in poor burning performance of the unit. They achieve the best results when these types of papers are shredded.

Office wastes will usually work well with lighting the waste since there is always ample paper in the waste to start the incineration process.

Cardboard will work well in all situations. This material burns very hot and fast. Newspapers are helpful in starting the incineration process.

Computer paper and sensitive documents, when neatly stacked in the drum with no obstructions, will burn very well. The air flow in the drum picks up each individual paper and burns it completely.

Fast Food Paper Wastes

The problem with this type of waste is the moisture content from soft drinks and ice. For proper incineration, the operator must allow this material to dry. After it has dried, lighting of the waste is all that is required to start the process of incineration.
Section 5 – Wood Products

Saw Dust
This material will incinerate on its own. When a fuel is added such as diesel fuel or waste oils, this will speed up the burn process and also eliminate a disposal problem of your oils.

Construction Site Wastes, Shipping Pallets
Wood from these sites burn very well. A small amount of oil or diesel (no gasoline or paint thinners) along with the newspaper will help start the process rapidly with little smoke at start up. Shipping pallets must be broken up to fit in the unit. After this is done, the same applies for all wood products.

Tree Limbs and Leaves
When these products are burned, the tree limbs and leaves should be mixed if possible. The leaves will insure the proper incineration of the tree limbs. Lighting of the leaves is all that is needed to start the process. Any type of yard waste material should be dried (no green material.) The high moisture content of these materials does not allow proper incineration.
Section 6 – Miscellaneous

Clothing, Gloves, Oily Rags, Packaging Materials

These kinds of materials will burn very well also. Moisture content must be low as with any material burned in the unit. An amount of cardboard added along with newspapers on top of the materials burned is needed to start the process.

Section 7 – Plastics

The unit will incinerate a variety of plastics. An oily absorbent and plenty of newspaper will be required to start the actual incineration of the plastic. The plastic will melt down to a molten state and then will burn very hot. Although the unit will incinerate plastics with no smoke, emissions are often not acceptable with states air quality standards. Plastics should not be incinerated without approval from your state officials.

Appendix #1

Use of liquid oils/diesel fuels/fuel oils

Successful testing has been completed for disposing of free oils containing no absorbent materials. Although care in loading the drum is needed, it is an alternative to mixing absorbent with the oil for disposal in SmartAsh.

A maximum of 20 gallons of liquid per load is recommended. Some small pieces of wood material are required for the disposing of oils in this manner. 4 to 5 pieces of 2” x 4” material 6” in length is sufficient. The wood pieces are put into the unit and allowed to float on the oil and are a wick to support the flame. The unit is ignited in the same fashion as other materials being disposed in the units.

Precautions: Do not overload the drum, 20 gallons maximum

If the drum is overloaded, during the disposal process the oil will become hot and boil over causing severe damage to unit components.

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