How To Dispose of Old Lighters Safely?

A lighter is a tool that facilitates the production of fire. It is a lightning tool for tobacco, gas, fireworks, campfire, and candles. Most lighters require lighter fluid to function, while others are rechargeable lighters. The lighter fluids are always in a metal or plastic casing.

Most people are not aware of the harm they can cause to us and the environment. This article explains the lighters, the effects of lighter fluid, and how to dispose of lighters safely.

Types of lighters.

According to the safety standard for cigarette lighters, there are groups of lighters. They are:

1. Cigarette lighters
2. Disposable lighters
3. Novelty lighters
4. Surrogate lighters

Cigarette lighters

Cigarette lighters are lighting tools for cigarette, cigar, and pipe smokers. We can also use it to ignite other things, but cigarette lighter differs from other lighters used to light other smoking products like fireplace fuels and charcoal or gas grills [1].

Disposable lighters

Disposable lighters are lighters you can't refill with fuel. Disposable lighters are also lighting products that use fuel like butane, isobutane, propane, other liquefied hydrocarbons, or any mixture whose vapor pressure is at 75^{o}F and exceeds gage pressure of 15 psi.

Also, disposable lighters are lighters that have a custom valuation at below $2, adjusted every 5 years to the price of $0.25. They adjust the prices according to the Producer Price Index for Miscellaneous Fabricated Products from June, 1983 [1]. An example of disposable lighter is a bic lighter that most convenience stores sell.

Novelty lighters

Novelty lighters refer to lighters used for entertainment and visual effect purposes. Novelty lighters also refer to lighters that look like other objects, mostly resembling toys. For instance, they can shape lighters into cars, motorcycles, guns, animals, musical instruments, etc.

The audio effects often include sounds like whistles, animal sounds, buzzers, beepers, and other noises not related to the function of a lighter. Countries like Colorado, Virginia, Maine, and other countries in the EU placed a ban on the production, trade, and importation of novelty lighters because they appeal to children below the age of 10 [2].

Novelty lighters use various lighter fluid. They can work with butane and other lighter fluid [1].

Surrogate lighters

Surrogate lighters are substitutes for working lighters.

How does that work?

Manufacturers design surrogate lighters to assess the safety measures to protect children handling lighters. So, they use a replica instead of giving them real, working lighters.

Surrogate lighters are the exact replicas of the copy manufacturers want to test. They are the same size, weight, and shape. However, surrogate lighters don't use liquid fluids since they are just for testing sequences.

It must also resemble the lighter as regards problems that could affect child resistance and protection. Since Surrogate lighters don't produce fire, they have an audio alert that signifies they have operated the lighter like the real one [1].

Can you recycle lighters?

No, you can't recycle disposable lighters. The material used to make disposable lighters is plastic or metal, with plastic being the most common material used to manufacture lighters.

The majority of recycling facilities do not accept lighters because they consider them to be hazardous waste. Manufacturers produce lighters with hazardous materials. These materials are plastic and butane. So, do not throw lighters in the recycling bin.

However, some local recycling facilities might offer specialized programs for bic lighters and some various brands that provide similar functionality alongside other hazardous items. Contact your local recycling center to find out if they accept lighters.

The dangers of lighters to the environment

As mentioned earlier, lighters are not items to be recycled because of their material components. We shouldn’t throw a lighter in a trash bin, whether it's household trash or regular trash, because a lighter is highly inflammable. These dangerous components are plastic and flammable materials.
Liquid fluid, used to produce flame when sparked, is a harmful hazardous component of lighters. They're often referred to as hydrocarbons:

1. Benzene

Benzene is a colorless or sometimes yellow liquid at room temperature. It is very inflammable, and it escapes into the atmosphere quickly. We can find that benzene forms from natural resources and human activities [3].

2. Butane

Butane is a colorless, odorless, and flammable hydrocarbon as liquified gas. Butane is in cigarettes, and its refilling pack [4].

3. Naphtha

Naphtha is another form of lighter fluid used to power lighters. Manufacturers use a 100% naphtha volume, but they also have other chemical ingredients to it. Lighter brands that use Naphtha as a lighter fluid are Zippo and Ronosol.

4. Propane

Propane, also referred to as liquified petroleum gas, is a clean burning gas used to power light, medium and heavy duty propane duties. Like other hydrocarbon gasses mentioned earlier, it is also a colorless and odorless liquid.

5. Hexamine

Hexamine is a solid fuel produced with trioxane. It burns, releasing no smoke, nor does it leave ashes. Hexamine contains a high energy density of 30 megajoules per kg.

6. Lacolene

Lacolene is a colorless hydrocarbon with a strong odor. It is a complex mixture of aliphatic hydrocarbons known as paraffin and cycloparaffins [5].

How do these hydrocarbons impact the environment?

Now that we know the fuel used by manufacturers to produce disposable or refillable lighters, let’s discuss how harmful lighter fluid is to human health and the environment.

First, producing lighter fluid is a process harmful to the environment. It leads to hydrocarbon pollution, which occurs during the extraction of hydrocarbons. Hydrocarbon pollution prevents the process of oxygen exchange between the environment and water, which causes damage to plants, animals, and water [6].

Water contaminated with hydrocarbons turns carcinogenic and changes the genetic composition of earth's flora and fauna. It often leads to a reduction in farm harvest, and humans suffer through famine. Also, it prevents the photosynthesis of other plants in water because light can't penetrate hydrocarbon contaminated waters [6].

Impact on humans

Its effects on humans are just as serious. Lighter fluid poisoning occurs when there is a leakage and someone swallows or inhales it. It affects the ears, nose, eyes, throat, kidneys, bladder, stomach, and intestines.

Its symptoms include loss of vision, severe throat pain, severe burning pain in the oral orifice. Lighter fluid poisoning leads to a reduction in the affected person’s urine output.

Lighter fuel in the stomach and intestinal organs leads to severe stomach pain, vomiting,and blood in excretion. It can also burn the esophagus [7].

It makes breathing difficult and causes severe chest pain. The effects of exposure to lighter fluid doesn't end there. It also affects our nervous systems. It causes dizziness, extreme sleepiness, insomnia, headache, uncoordinated movements, tremors, and seizures. In addition, it leads to skin irritation and burns holes into the skin tissue [7].

How to get rid of disposable lighters

To avoid them entering the environment or accidently falling into kids' hands, where they might be exposed to harmful liquids, we must throw our used disposable lighters in the proper garbage collection. If we just dispose of it in our regular trash, it ends up in landfill piles, or worse, washes into the ocean, and birds and marine animals ingest it.

Since recycling centers consider disposable lighters as household hazardous waste, we must learn how to properly dispose of lighters in garbage without exposing the toxic chemicals to the environment.

Here's how to dispose of disposable lighters:

- Check if your local recycling centers accept hazardous materials before disposing of them in your recycling bin.
- Check the label instructions of your lighters to see if the manufacturer left recycling or disposal instructions.
- Do not throw your lighter fluid in your bic lighters separately in the garbage.
- Also, do not put your half-used lighter into the garbage.
- There are some stores that offer a return program. You can drop off your used lighters at stores that offer return programs.
- You can wipe the inside of your lighter of all the fuel to make disposal safer.
- You can also bury your lighter in a bucket full of sand, gravel, rocks, or any other material that isn't inflammable for up to two weeks. This gets rid of any residual fuel left in the lighter.
- Before disposal, you get rid of lighter fluid by burning it. However, you need to be careful when you do this. Turn your lighter on at a safe distance away from inflammables to avoid a fire hazard and let it burn out till it's empty.
- Do not, under any circumstances, pour lighter fuel into the drain because it will erode septic tanks and sewers.

Conclusion

There's no denying that lighters are essential tools in our daily lives, but it's crucial to remember the importance of disposing of them properly. Taking the right approach to lighter disposal can prevent potential fires, health complications and environmental damage from hazardous materials.

So, now that you know how to dispose of lighters, consider making some eco-friendly choices too. Lighter refills can extend the life of your lighter, while rechargeable lighters

powered by electricity offer a safer alternative to traditional lighter fluid models. And remember the humble match- biodegradable option that's been around for ages.

References

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