

The injustice of plastics



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Disadvantages of Plastics are 1. Flammable – This is definitely an advantage in that they can be melted down, however smoldering plastics can release toxic fumes into the environment. 2. Cost of Recycling – While recycling is a plus, recycling is a very costly endeavor. 3. Volume – In the United States 20% of our landfill is made up of plastics. As more products are being made of plastics, where will this lead us in the future? 4. Durability – This is an advantage as well as a disadvantage. Plastics are extremely durable, which means that they last a long time.

Those plastics in the landfill will be there for years. Plastics make our lives easier, however is their cost on the environment worth it? We can only hope that soon someone will invent a way to safely and cheaply melt and reuse plastics. A plastic material is any of a wide range of synthetic or semi-synthetic organic amorphous solids[citation needed] used in the manufacture of industrial products. Plastics are typically polymers of high molecular mass, and may contain other substances to improve performance and/or reduce costs. Monomers of plastic are either natural or synthetic organic compounds.

The word plastic is derived from the Greek ?????????? (plastikos) meaning capable of being shaped or molded, from ?????????? (plastos) meaning molded. [1][2] It refers to their malleability, or plasticity during manufacture, that allows them to be cast, pressed, or extruded into a variety of shapes—such as films, fibers, plates, tubes, bottles, boxes, and much more. The common word plastic should not be confused with the technical adjective plastic, which is applied to any material which undergoes a permanent change of shape (plastic deformation) when strained beyond a certain point.

Aluminum, for instance, is plastic in this sense, but not a plastic in the common sense; in contrast, in their finished forms, some plastics will break before deforming and therefore are not plastic in the technical sense. There are two types of plastics: thermoplastics and thermosetting polymers. Thermoplastics will soften and melt if enough heat is applied; examples are polyethylene, polystyrene, polyvinyl chloride and polytetrafluoroethylene (PTFE)[3]. Thermosets can melt and take shape once; after they have solidified, they stay solid.

Overview Plastics can be classified by chemical structure, namely the molecular units that make up the polymer's backbone and side chains. Some important groups in these classifications are the acrylics, polyesters, silicones, polyurethanes, and halogenated plastics. Plastics can also be classified by the chemical process used in their synthesis, such as condensation, polyaddition, and cross-linking. [4] Other classifications are based on qualities that are relevant for manufacturing or product design.

Examples of such classes are the thermoplastic and thermoset, elastomer, structural, biodegradable, and electrically conductive. Plastics can also be classified by various physical properties, such as density, tensile strength, glass transition temperature, and resistance to various chemical products. Due to their relatively low cost, ease of manufacture, versatility, and imperviousness to water, plastics are used in an enormous and expanding range of products, from paper clips to spaceships.

They have already displaced many traditional materials, such as wood; stone; horn and bone; leather; paper; metal; glass; and ceramic, in most of their former uses. The use of plastics is constrained chiefly by their organic

chemistry, which seriously limits their hardness, density, and their ability to resist heat, organic solvents, oxidation, and ionizing radiation. In particular, most plastics will melt or decompose when heated to a few hundred degrees celsius. [5] While plastics can be made electrically conductive to some extent, they are still no match for metals like copper or aluminum. citation needed] Plastics are still too expensive to replace wood, concrete and ceramic in bulky items like ordinary buildings, bridges, dams, pavement, and railroad ties. Chemical structure Common thermoplastics range from 20, 000 to 500, 000 amu, while thermosets are assumed to have infinite molecular weight. These chains are made up of many repeating molecular units, known as repeat units, derived from monomers; each polymer chain will have several thousand repeating units. The vast majority of plastics are composed of polymers of carbon and hydrogen alone or with oxygen, nitrogen, chlorine or sulfur in the backbone. Some of commercial interests are silicon based.) The backbone is that part of the chain on the main " path" linking a large number of repeat units together. To customize the properties of a plastic, different molecular groups " hang" from the backbone (usually they are " hung" as part of the monomers before linking monomers together to form the polymer chain). This fine tuning of the properties of the polymer by repeating unit's molecular structure has allowed plastics to become such an indispensable part of twenty first-century world.

Some plastics are partially crystalline and partially amorphous in molecular structure, giving them both a melting point (the temperature at which the attractive intermolecular forces are overcome) and one or more glass transitions (temperatures above which the extent of localized molecular

flexibility is substantially increased). The so-called semi-crystalline plastics include polyethylene, polypropylene, poly (vinyl chloride), polyamides (nylons), polyesters and some polyurethanes. Many plastics are completely amorphous, such as polystyrene and its copolymers, poly (methyl methacrylate), and all thermosets.

Almost every market that you go today, you will see people carrying their shopping items in plastic bags. Right from food items to clothes to shoes, there is hardly any item that we do not use a plastic bag to carry. However, before stuffing your home with different styles, colors and shapes of plastic bags, have you every considered the dangers that are inherent in using them? No? Then, reading through this article is a must for you. Go through the following lines and explore the disadvantages of plastic bags. After reading them, we are sure that you will prefer sticking to paper bags and the like. Dangers Of Using Plastic Bags

Environmental Damage Plastic bags have been known to cause a lot of environmental damage. A single plastic bag can take up to 1000 years, to decay completely. This makes the bags stay in environments longer, in turn leading to great build-up on the natural landscape (much more than degradable materials like paper). In other words, the more plastic bags you use, the greater the chances of environmental damage. **Threat To Animal Life** As per Marrickville Council of Australia, as many as 100, 000 whales, turtles and birds die have been reported to die every year, mainly because of plastic in their environment.

Plastic bags not only have adverse effects on our natural habitats, but have also been found to be responsible for the death of many animals, mainly on

account of the suffocation encountered on eating them. Suffocation Not only animals, infants and young children have also been reported to have lost their life, on account of plastic bags. Since plastic bags are thin and airtight as well, children often end up blocking their mouths and nostrils with them. In case they are not being monitored by an adult, this leads to suffocation and, in some cases, even death.

Pollution Plastic bags are extremely durable. In case you are thinking of this as an advantage, just bring to mind an image of the huge landfill that you visited on the city outskirts, the other day. In most probability, majority of the rubbish present there will comprise of plastic bags only. In other words, plastic bags have led to a great increase in the pollution levels. Fumes Since plastic bags are not bio-degradable, the only way to get rid of them is to burn them up. Though lighting a match to them is easy, it has more than its fair share of disadvantages.

The biggest of them is that smoldering plastics can release toxic fumes into the environment, in turn taking the air pollution to much higher levels. Non-renewable One of the main disadvantages of plastic bags is that they are not renewable. The reason behind this is that they are made of petrochemicals, a non-renewable source of energy. They can be recycled, but not as easily as paper bags. Plastic bags can last for as much as hundred of years. In other words, long after you are no more, the plastic bag used by you will be in existence. Plastics are manufactured from petroleum.

This brings a host of issues (destruction of habitat, extraction of crude oil, security issues from the volatile countries where oil is produced, processing of petroleum, chemical manipulation into various types of plastics). The

manufacture involves many chemicals, many of which have not been sufficiently tested for their toxicological impact on humans or animals. The final plastic product is often a chemical entity that in and of itself has had insufficient toxicological and ecotoxicological testing. An example would be PVC, forms of which are banned in Europe but exist widely in children's toys in America.

Recent controversies over plastic bottles (many toxicologists recommending not re-using plastic water bottles and not storing food in tupperware) have highlighted the potential risks. Exacerbating the problem is that science is only now advancing to where it can detect plastic components in human blood and then trace concentrations and link them to human ailments and diseases. The plastics industry itself often spins plastic and related plastic chemicals into a variety of products, some of which are hazardous and controversial (Teflon, PVC, Polyethylene, polystyrene, various silicones in body and hair care).

Plastic-producing companies are often chemical companies or subsidiaries of chemical companies, both with poor track records when it comes to their adherence to regulatory compliance and their willingness to perform toxicological analysis on the products they make. Plastics often leech component chemicals, including hazardous chemicals, through common temperature changes. It is for this reason that toxicologists do not recommend storing very cold foods in plastics or heating foods (microwaving especially) in plastics. Plastics are durable materials.

Thus, they are hard to eliminate once used and create tremendous waste. While some common plastics can be recycled (#1 and #2 plastics used in

common soda and milk bottles), the vast majority cannot. They take up a lot of space in landfills and create air pollution when incinerated. The Disadvantages of Plastic Skylights Although plastic skylights are safer and sturdier than glass skylights, they do pose several long term disadvantages. Firstly, because they are made in single sheets, they can only be curved or bent in one area, which limits design options.

Secondly, all plastics deteriorate in strength and light transmission as time passes, due to ultraviolet rays, heat and oxidation (and none can be entirely prevented). And finally, the life and service of plastic materials is highly unpredictable. Therefore choosing the plastics you will use for a plastic skylight requires much research and first hand knowledge. This is where Roof 101 can help – our contractors have worked with all kinds of plastics in plastic skylights, and their first hand experience could greatly assist you in reaching a decision.