What is plastic?

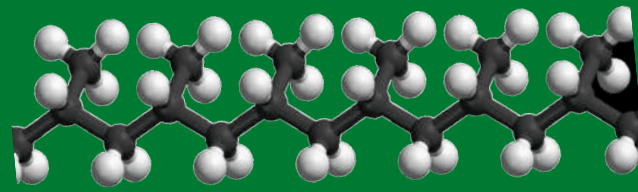
1

How is it different from residual wastes?

NO PLASTICS IN NATURE INITIATIVE

What is plastic?

- Plastic is a polymer



- Man made, **99% of plastics are synthetic polymers produced from petrochemicals** that accounts for **4% of global annual use of oil and gas**

NO PLASTICS IN NATURE INITIATIVE

#AYOKO NG PLASTIK

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First synthetic polymer was invented in **1869** by John Wesley Hyatt who innovated this to provide a **substitute for ivory** that has pressured by the growing popularity in billiards

NO PLASTICS IN NATURE INITIATIVE

#AYOKO NG PLASTIK

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How is it different from residual wastes?

plastic

NO PLASTICS IN NATURE INITIATIVE

How is it different from residual wastes?

Plastics are not only in residual wastes, as there are plastics in recyclable wastes.

FUN FACT: Residual wastes can be further categorized as with potential (i.e. flexible plastics, textiles, rubber) that should be brought to the Material Recovery Facility for waste diversion and without potential (i.e. soiled paper, soiled plastics) that should be brought directly to the landfill.

2

How many plastic types are there?

NO PLASTICS IN NATURE INITIATIVE

How many plastic types are there?

There are 7 plastic types.

ALAMIN NATIN ANG IBA'T IBANG URI NG PLASTIK

Para sa unang bahagi ng #IWASThoughts, ipapakita natin ang iba't ibang uri ng plastik na madalas natin ginagamit sa loob at labas ng ating mga tahanan. Halina't alamin natin ang Standard Classification of Plastics (Resin Code 1-7) na ginawa ng Society of Plastics Industries noong 1998. Laging tandaan, 'pag may duda: hanapin ang nakamarkang resin code!

Polyethylene Terephthalate (PET) Bottles

High Density Polyethylene (HDPE)

Polyvinyl Chloride (PVC) Pipes

Low Density Polyethylene (LDPE)

Polypropylene (PP)

Polystyrene (PS)

Other

Multilayer Film Sachets (LDPE/PP)

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Polyethylene Terephthalate (PET) Bottles

Ang PET ay isang uri ng plastik na hindi basta-basta tinatablan ng mikrobyo, na nakakaapekto sa kalidad ng pagkain at inumin, kaya madalas itong ginagamit sa pag-iimbak ng pagkain at tubig. Hindi tulad ng boteng babasagín (glass bottle), ang PET ay magaan at matibay.

Hindi pwedeng gamtin nang paulit-ulit ang PET bottles dahil ang ilang additives na bahagi ng plastic (tulad ng Bisphenol A) ay maaaring sumama sa nilalaman nitong inumin at magdulot ng masamang epekto sa iinom nito.

SANGGUNIAN: Barber, N. A. (2017). Polyethylene terephthalate: Uses, properties, and degradation. New York, NJ: Nova Science.

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High Density Polyethylene (HDPE)

Nang dahil ba sa pandemic ay bumili ka ng bleach? Maaaring gawa sa HDPE rin ang lalagyan nito. Ang istrukturang kemikal ng HDPE ay sadyang matibay para sa mga samu't saring aplikasyon tulad ng mga laruan at lalagyan ng kemikal (kahit kasing laki ng drum pa ito).

Polyvinyl Chloride (PVC) Pipes

Marahil bihira lamang ang nakakakilala sa uri ng plastik na ito, ngunit ito na ang karaniwang ginagamit bilang daluyan ng tubig sa ating mga bahay. Ang mga tubo ng tubig na ito ay gawa sa PVC. Ang tubong gawa sa PVC ay mas matibay at pangmatagalan.

Ngunit sa ibang mga bansang may taglamig na klima, ang PVC pipes ay hindi ginagamit upang pagdaluyan ng mainit na tubig sa kabahayan dahil ang mataas na temperatura ng tubig ay nakakasira paglaon sa ganitong uri ng plastik.

SANGGUNIAN: Stevens, E. S. (2002). Green plastics: An introduction to the new science of biodegradable plastics. Princeton, NJ: Princeton Univ. Press.

Low Density Polyethylene (LDPE)

Kumpara sa HDPE, mas magaan at mas nababaluktok o flexible ang LDPE. Madalas itong nakikita bilang manipis na plastik, tulad ng "plastic labo". Bilang isang film, ginagamit din ang LDPE bilang sisidlan ng mga dry goods tulad ng electronics. Ginagamit din ito bilang lining (isang layer sa ilang paper cups).

SANGGUNIAN: Alem, A. (2017). The 5 Most Common Plastics & Their Everyday Uses. Retrieved August 25, 2020, from https://www.cutplasticsheeting.co.uk/blog/uncategorized/the-5-most-common-plastics-their-everyday-uses/

Polypropylene (PP)

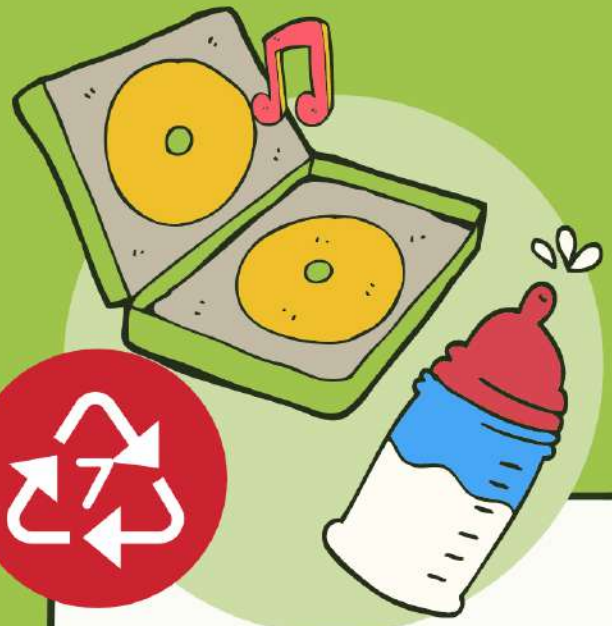
Ang polypropylene ay isang uri ng plastik na ginagamit sa samu't saring kagamitan. Ito ay dahil sa katangian nito na madali mamolde. Matatagpuan ang PP sa mga makinarya, sa mga kagamitan sa bahay, sa mga laruan, at kahit sa ilang lalagyan ng pagkain.

SANGGUNIAN: Alem, A. (2017). The 5 Most Common Plastics & Their Everyday Uses. Retrieved August 25, 2020, from https://www.cutplasticsheeting.co.uk/blog/uncategorized/the-5-most-common-plastics-their-everyday-uses/

Polystyrene (PS)

Ang polystyrene ay mas pamilar bilang styropor. Pero hindi lamang sa styropor cup at mga pambalot ng mga babasagín o fragile na kagamitan matatagpuan ang polystyrene. Ginagamit din ito bilang casing ng ilang kagamitang elektroniko at aparato.

SANGGUNIAN: Alem, A. (2017). The 5 Most Common Plastics & Their Everyday Uses. Retrieved August 25, 2020, from https://www.cutplasticsheeting.co.uk/blog/uncategorized/the-5-most-common-plastics-their-everyday-uses/



Other

Ang resin code 7 ay ginagamit para sa mga plastik na gawa sa iba pang uri o magkahalong uri (hybrid resin) ng plastik. Minsan, ang mga plastik na buhat sa niresiklong halo-halong plastik (recycled mixed plastic) ang minamarkahan ng ganitong resin code.

SANGGUNIAN: Alem, A. (2017). The 5 Most Common Plastics & Their Everyday Uses. Retrieved August 25, 2020, from https://www.cutplasticsheeting.co.uk/blog/uncategorized/the-5-most-common-plastics-their-everyday-uses/

Multilayer Film Sachets (LDPE/PP)

Kung kikilatisin ang mga sachet (hal. punitin at babalatan), ay makikita na marami itong sáray o layer (kaya tinatawag na multilayer film) at kadalasan gawa sa magkakaibang uri ng plastik ang mga bahagi na ito. Ang pagtapon nito ay isang hamon sapagkat iba iba na ang uri nito depende sa pagkakagawa at layunin, iba iba pa ang laki nito at walang insentibo ang pagresiklo o pag-recycle nito.

SANGGUNIAN: Global Alliance for Incinerator Alternatives (2019). Plastics Exposed: How Waste Assessments and Brand Audits are Helping Philippine Cities Fight Plastic Pollution. Retrieved August 25, 2020, from https://www.no-burn.org/wp-content/uploads/PlasticsExposed-3.pdf

Are all plastics recyclable?

3

How do we recycle each plastic type?

NO PLASTICS IN NATURE INITIATIVE

Are all plastics recyclable?

All plastic types are technically recyclable, but sometimes the technicalities and logistics for doing so in some types are non-economical.

HINDI LAHAT NG PLASTIC AY RECYCLABLE

*Bagamat halos lahat ng plastik (thermoplastic) ay maaring i-recycle, marami ring kadahilanan na nakahahadlang o nakaaapekto sa proseso ng recycling.

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Isang isyu sa pagre-recycle ng tinatawag na post-consumer plastic o mga ginamit nang plastik ay ang pagiging marumi o kontaminado nito. Gugugol din ng karagdagang salapi, tao, enerhiya, at likas-yaman ang paglilinis (kung kaya pa isalba) ng mga ganitong plastik. Kinakailangang mataas pa rin ang kalidad at purity ng plastik upang mapanatili ang mga katangian nito kahit pa i-recycle ito.

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Mahirap, kung hindi imposible, ang pag-recycle ng multi-layer plastics gaya ng paper cups at plastic sachet. Ang labas ng isang paper cup, halimbawa, ay gawa sa papel ngunit sa loob nito ay isang manipis na layer ng plastik. Dahil mayroong dalawang magkaibang materyales, ang paper cups ay hindi maaaring i-recycle maliban kung ang mga materyales nito ay paghihiwa-hiwalayin.

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Isa ring hamon sa pag-recycle ng post-consumer plastic ay ang kahirapan minsan sa paghiwa-hiwalay nito. Kapag ang plastik ay nasira o nagkagutay-gutay, maaring hindi na malaman ang eksaktong uri ng plastik dahil maaring nawala, nabura, at sadyang hindi na mabasa ang resin identification code nito.

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NARITO ANG RECYCLABILITY NG MGA PLASTIK BASE SA RESIN IDENTIFICATION CODE NITO:

1 Polyethylene Terephthalate (PET)

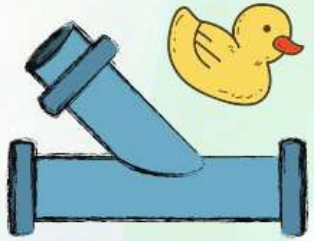
Maaring gamitin muli bilang lalagyan ng pagkain

2 High Density Polyethylene (HDPE)

Hindi na maaring magamit bilang lalagyan ng pagkain

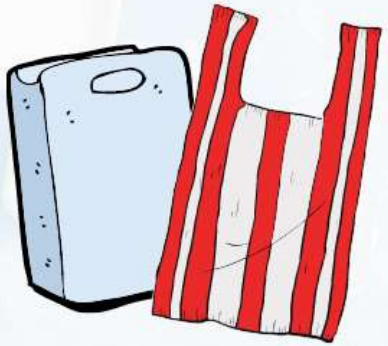
3 Polyvinyl Chloride (PVC)

Mahirap i-recycle dahil mataas ang taglay na chlorine at ibang additives tulad ng plasticizers



4 Low Density Polyethylene (LDPE)

Dahil sa pagiging magaan nito, mahirap ito kolektahin at hindi competitive ang presyo ng recycled na LDPE



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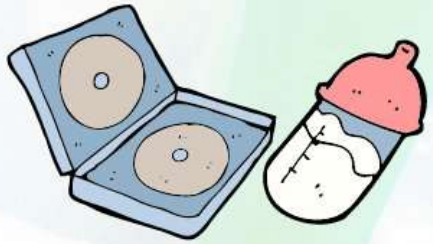
#IWASTONatin | projectiwasto

NARITO ANG RECYCLABILITY NG MGA PLASTIK BASE SA RESIN IDENTIFICATION CODE NITO:

5	6	7	7
Polypropylene (PP)	**Polystyrene (PS)**	**Other**	**Multilayer Film Sachets**
Hindi na maaring gamitin bilang lalagyan ng pagkain	Sa aplikasyong pang-pagkain, mataas ang tsansa na mag-absorb ito ng mga mantika at sebo (isang contaminant) kaya halos hindi ito nire-recycle	Depende sa uri ng plastik, kadalasang mababa na ang halaga nito at hindi specified ang uri ng plastik kaya hindi ito nare-recycle basta-basta	Hindi madali ang pag-recycle nito dahil ito ay gawa sa iba-ibang uri ng plastik, at minsan'y may kalakip pang metal layer. Ang mga tinta o tina na ginamit sa sachet ay naituturing ding contaminant kaya lalong komplikado ang pag-recycle nito. Iba rin ang katangian nito (film) kaya't hindi ito laging kompatible sa karaniwang makinarya ng mga recycling plant.
			

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NO PLASTICS IN NATURE INITIATIVE

How do we recycle each plastic type?

There are organizations that collect certain plastic types, but before thinking of recycling let us refuse and reuse.

WHERE THE WASTE GOES

check out these businesses and organizations where you can turn over / sell / donate your throw-away's instead of sending them to the landfills

Plastic Waste & Packaging

Green Antz Builders – fb.com/GreenAntzBuilders
Clean Our Oceans Project (COOP) – cleanouroceansproject.com/
Sentinel Upcycling Technologies – fb.com/SentinelUpCyclingTechnologies/
The Plastic Flamingo – https://www.theplaf.com/

Preloved Home Items

sell online through IG, FB, Shopee, etc.
Buhay Zero-Waste Pre-loved group on FB
Caritas Manila & **Segunda Mana**

E-Waste

Globe Telecom Project 1 Phone globe.com.ph/globebridgecom/project1phone
The E-Waste Project fb.com/TheEwasteProject/

Food Waste

GreenSpace Pilipinas Food Waste Collection – *COMING SOON!*
ShareWaste – sharewaste.com/

Miscellaneous

Tetra Pak Philippines – Tetra Paks
Humble Sustainability – electronics, clothes, office supplies, accessories, furniture, books, & other recyclable waste (humblesustainability.com)
Silent Beads – brown paper bags (fb.com/SilentBeads/)

It is in GreenSpace's mission to help divert our wastes from going to our landfills.
With that, we have compiled a list of places to turn over, donate, and/or sell the things you plan to throw away.
You can also submit resources as we continuously update the list. Check it out below:

cleanup.carrd.co*

GREENSPACE

*some organizations have put collection on hold due to quarantine measures but you can check out their pages for updates

4 Can we really live in a plastic-free world?

NO PLASTICS IN NATURE INITIATIVE

#AYOKO NG PLASTIK

Can we really live in a plastic-free world?

We can definitely live in a world free of unnecessary plastics – or plastics that we can live without (e.g. plastic straws, plastic cups, plastic bags).

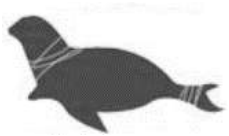
What are the impacts of plastic pollution?

5

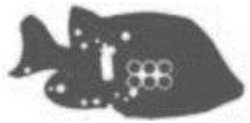
How does it relate to food? water?

PLASTIC POLLUTION: A Serious Challenge to our Natural World, Society & Global Economy

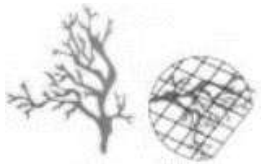
Environmental Impacts



Entanglement



Ingestion



Habitat damage

Social Impacts

Unregulated plastic waste management

Human plastics ingestion

Soil and water contamination

Economic Impacts

Fisheries

Maritime trade

Tourism

WWF-Dahlberg Report, 2019, citing various studies

6 Are biodegradable plastics really biodegradable?

NO PLASTICS IN NATURE INITIATIVE

Are biodegradable plastics really biodegradable?

They can degrade but can take a long time.

WWF

NO PLASTICS IN NATURE INITIATIVE

#AYOKO NG PLASTIK

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Are biodegradable plastics really biodegradable?

Biodegradable plastics **do not degrade fully in the natural environment**

Without **sufficient infrastructure**, these materials can end up in landfills or in the environment

Claims of biodegradability can lead **people to believe that these materials can be littered without consequences**

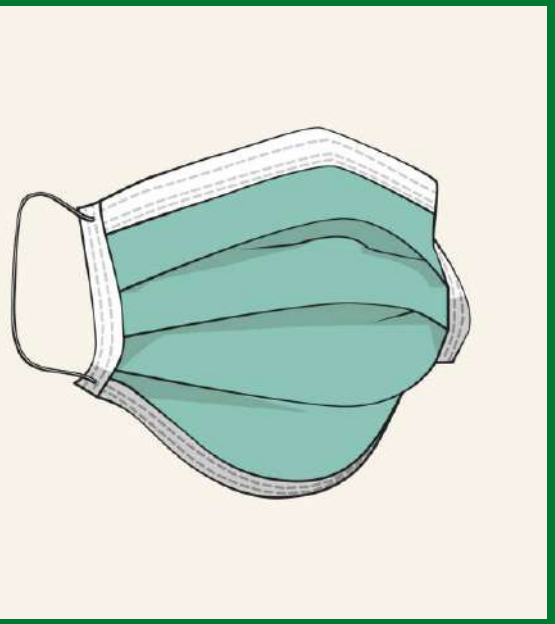
NO PLASTICS IN NATURE INITIATIVE

Oxo-degradable plastics?

Oxo-degradable plastics are misidentified as biodegradable – they are made with additives that are sensitive to heat and light, and only degrade into microplastics which are even more harmful to the environment.

How has the pandemic affected plastic generation 7 and consumption?

NO PLASTICS IN NATURE INITIATIVE



"If the global population uses one disposable face mask per day after lockdowns end, the pandemic could result in a ***monthly global consumption and waste of 129 billion face masks and 65 billion gloves****" (Prata et al, 2020)*

Anecdotal account says that about **10-20 improperly disposed face masks per day** are collected in the Pasig River/ Baseco area.

NO PLASTICS IN NATURE INITIATIVE

*"Packaged take-out meals and home-delivered groceries contributed **an additional 1,400 tons of plastic waste during Singapore's 8-week lockdown**." (Adyel, 2020)*

8

What are the solutions out there to address the issue?

NO PLASTICS IN NATURE INITIATIVE

What are the solutions out there to address the issue?

- The Philippine government is now finalizing the **National Plan of Action on Marine Litter**
- Philippines support the adoption of a **global treaty on marine plastic pollution**.
- Businesses **eliminating unnecessary plastics** in their supply chain.
- **Cities committing to stop plastic waste leakage** in their jurisdiction.
- **Driven general public** in eliminating unnecessary plastics in their lives.

PLASTIC SMARTCITIES | WWF

https://plasticsmartcities.org/

Share your solution in this knowledge platform for cities around the world.

cloop

Waste collection and recycling

_Audeo

REFILL ON THE ROAD

salin fresh

Waste Reduction

_morPH Bioplastic

AtoANI BioPack

9

What are the available alternatives for single-use plastics?

NO PLASTICS IN NATURE INITIATIVE

The best alternative are the reusables.

We should strive to eliminate single-use plastics and continuously reuse our reusables.

For plastic bags, we should promote reusable bags instead of paper bag as this has more environmental impact. WWF has developed an Alternative Materials Decision Tool to better guide businesses in this shift.

The Alternative Materials Tool

Debunking common packaging misconceptions.

10

What are your current projects to address the plastic waste problem?

projectiwasto

Project IWASTO

Integrated Waste Analysis, Survey, and Technological Options

Duration: January 2020 - January 2022
Project Leader: Dr. Maria Antonia N. Tanchuling

IM4MANILABAY IWASTO
INSTITUTE OF CIVIL ENGINEERING, UNIVERSITY OF THE PHILIPPINES DILIMAN

OVERVIEW

Project IWASTO aims to describe and assess the solid waste management (SWM) activities in selected cities that are part of the Manila Bay watershed, and to develop integrated solid waste information and technology management system considering current conditions and future scenarios. IWASTO is one of the component projects under the Integrated Mapping, Monitoring, Modelling, and Management System for Manila Bay and Linked Environments (IM4ManilaBay) Program.

Funded and monitored by:
DOST - Philippine Council for Industry, Energy, and Emerging Technology Research and Development

WWF - Philippines

NO PLASTICS IN NATURE INITIATIVE

STOP THE FLOW OF PLASTICS ENTERING NATURE BY 2030 elimination of unnecessary plastic; doubling reuse, recycling, and recovery; and ensuring the remaining plastic is sourced responsibly.

PLASTIC SMARTCITIES | WWF

A global movement of cities and tourism destinations that are fighting plastic pollution.

POLICY

Pushing for national support to the global treaty on marine pollution and Extended Producers Responsibility

WWF | PACT No Plastics in Nature

Working with businesses to make and implement public commitments to reduce or eliminate unnecessary plastics in their operations

#AYOKONGPLASTIK | YOUR PLASTIC DIET

Spark conversations and individual actions to address plastic pollution