ŠTO PIŠE NA DNU PLASTIČNE AMBALAŽE?

U posljednje vrijeme kruži internetom tekst o brojkama na dnu plastične ambalaže. Taj je tekst ponovno primjer kako se manipulira javnošću. Problem je u tome što takve tekstove prosljeđuju po načelu *šalji dalje* i veliki broj visokoobrazovanih. Nikada nisu učili u školi o plastici..

Izvorni tekst bit će u kurzivu a odgovor u normalu.

Vjerovatno pred deset i više godina nitko još nije pomišljao, da ćemo običnu vodu piti iz plastične boce.

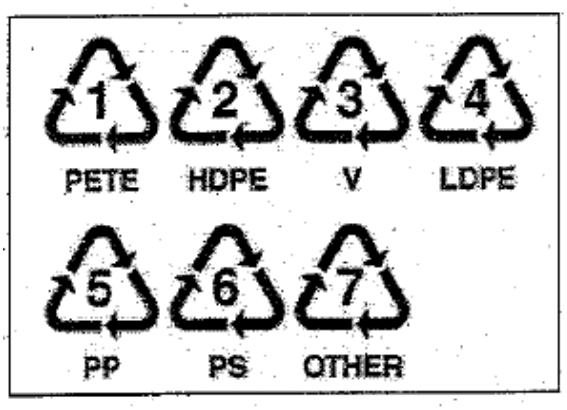
Vjerojatno pred 40 godina nitko još nije pomišljao, da ćemo običnu vodu piti iz primjerice PET-plastenki. Godine 1976. proizvedene su prve plastenke od PET-a. Danas se godišnje proizvodi oko 400 do 500 milijardi takvih boca.

Još danas je to više iz navike nego potrebe, jer je voda iz većine vodovoda još uvijek pitka.

Ispravno. O tome sam pisao u *Vjesniku* 10. kolovoza 2007. pod naslovom *Treba piti vodu iz slavine* kada se u SAD povela kampanja protiv PET-boca. Puno više o napadima na plastiku možete pročitati u knjizi *Tehnika, zaštita okoliša i zdravlja* (izdavač *Graphis*, Maksimirska 88, Zagreb). Treba upozoriti i na tekst: *Truje li se doista cijeli svijet plastenkama od PET-a* (*Vjesnik*, 10. veljače 2005.). Postavljeno je retoričko pitanje: *Truju li Hrvati Arape kada im prodaju vodu u PET-plastenkama*.

Postoji veliki broj vrsta plastike. Ipak u javnosti se u pakovanjima (ambalaži) susreću 6 najučestalijih vrsta.

Svaki ambalažni proizvod ima oznaku. Oznaka je trokut s brojem u sredini. Pogledajte sliku



Već ova slika pokazuje nepoznavanje stvarnog stanja. Slika mora izgledati ovako.

Materijal	Oznaka
1. PET – poli(etilen-tereftalat)	1 PET
2. PE-HD – polietilen visoke gustoće	2 PE-HD
3. PVC – poli(vinil-klorid)	3 PVC
4. PE-LD – polietilen niske gustoće	4 PE-LD
5. PP – polipropilen	5 PP
6. PS – polistiren	6 PS
7. Ostali višeslojni (laminirani) materijali	7

Iz knjiga A. Rogić i sur.: Polimeri i polimerne tvorevine
(Društvo za plastiku i gumu, Ivana Lučića 5, p. p. 119, Zagreb, 2008.)

U nekim verzijama za 7, broj kojim se označuju višeslojni materijali piše:

7 - PC (ili bez oznake) *- To je najlošija plastika za prehrambene proizvode, jer izlučuje kemikaliju* ***BPA.*** *Na žalost, koristi se u bočicama za dojenčad, sportskim bocama i posudama za spremanje hrane.*

To nema veze s brojem 7. PC je oznaka za polikarbonat i zbog BPA (bisfenola A) *ugledni zeleni* proganjaju taj materijal. Službeni stavovi, koje sam primio 15. srpnja 2011. su sljedeći

National Authorities Confirm Safety of BPA

EU-Risk Assessments (2003/2008)	No concern regarding consumer products made from materials based on BPA; assessment included endocrinicity, low dose and neurodevelopment
European Food Safety Authority (2002/2007/2008/2009/2010)	*"[…] not identify any new evidence which would lead them to revise the current Tolerable Daily Intake for BPA of 0.05 mg/kg body weight […] data currently available do not provide convincing evidence of neurobehavioural toxicity of BPA."*
Japanese Ministries MHLW, METI (2001/2004/2005)	Food contact materials based on BPA are safe for their intended uses.
U.S. Food and Drug Administration (2005/2007/2008/2010)	No evidence of harm to children or adults from the current levels of BPA-exposure, and at the same time provided guidance on how parents can minimise infant exposure to BPA if they choose to do so *"Studies employing standardised toxicity tests have thus far supported the safety of current low levels of human exposure to BPA."*
U.S. NSF Assessment (2007)	BPA based materials can safely be used in contact with drinking water.
Health Canada (2008/2009/2010)	*"[…] the current dietary exposure to BPA through food packaging uses is not expected to pose a health risk to the general population."* Canadian government officially added BPA to Schedule 1 of the Canadian Environmental Protection Act (CEPA)

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National Authorities Confirm Safety of BPA

United Kingdom

(December 2010)

"The Agency's current position is that exposure to BPA from food contact materials does not represent a risk to consumers based on current scientific evidence that has been reviewed by independent experts."

Germany

BfR (April 2010)
German government (June 2009)

"After careful scientific assessment of all available studies, in particular studies in the low dose range of bisphenol A, EFSA and BfR come to the conclusion that there is no health risk from BPA for infants and small children when the polycarbonate bottles are used in the normal way."

"For hardly any other chemical the toxicological and exposure data are in such a manner extensive and suitable to execute a valid risk assessment and derive a safe TDI on them as for BPA. […]"

France

French government, 2011

""BPA-based materials are found in inner linings of many metal packagings (cans) where it has the function to protect the metal from corroding and to guarantee the indispensable integrity of the food. There is not one universally usable substitute for BPA in this application. In addition, the harmlessness of the few resins available still needs to be proven."

Spain

AESAN, April 2010

"Under these circumstances, and taking into account the scientific data and the EFSA recommendation, the Spanish safety authority, like the large majority of the other national safety authorities in Europe, does not think that there is a reason to take any measures with regard to the substance at the moment."

National Authorities Confirm Safety of BPA

Switzerland

BAG, February 2011

"On Nov 25, 2011, EU announced a ban on BPA in baby bottles, although in September EFSA, after comprehensive re-assessment of all available studies, did not identify a health risk. BAG reached the same conclusions as EFSA. The EU´s decision is not based on new scientific data.BPA has been examined since 50 years, and therefore risks associated with it are well understood. Exposure via food is far below the TDI ; thus, consumer safety is provided. Also for babies and small children there is no health risk from the use of BPA-based bottles."

Ireland

Rhodri Evans, chief toxicologist
June 2009

"The advice is that there's no need to avoid BPA. […]"

November 2010

"The clear weight of scientific evidence, from an extensive range of studies and risk assessments undertaken over a considerable period of time, indicates that BPA does not present a significant human health risk for the whole population including children at current very low levels of exposure. "

"Replacing long standing, extensively studied chemicals with newer alternatives with a more limited safety database does not necessarily lead to safer products."

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National Authorities Confirm Safety of BPA

Austria

AGES, July 2010

"From the perspective of food safety there is no reason, to take baby bottles made of polycarbonate from the market."

Toliko o BPA

Tako su pisani i ostali dijelovi teksta.

U tekstu se navedene tri dobre plastike. To su *PE-HD* ili punim imenom polietilen visoke gustoće, *PE-LD*, polietilen niske gustoće kojeg neki drugi *zeleni* proganjaju zbog njihove uporabe kao plastičnih vrećica. Premda je to najbolji materijal za vrećice s ekološkog motrišta. Npr. 10 puta manje opterećuje s CO_2 od papirnatih vrećica. Ali nikoga ne smeta što trgovački lanci u vrećice od istog materijala pakiraju toaletni papir. Dobar je i PP – polipropilen.

PVC (nekad i 3V) *- Ova plastika ispušta dvije otrovne kemikalije, a obje ometaju djelovanje hormona u ljudskom tijelu. Usprkos tome, to je još uvijek najčešće upotrebljavana plastika za boce*.

PVC ili poli(vinil-klorid) nikada nije bio 3V, koristio se dugo za plastenke za ulje, dok ih nisu zamijenile one od PET-a. Nikada se nisu koristile za pakiranje vode, pa se ne mogu proglasiti da se i danas najviše u njih pakira voda. A o gospodarenju PVC-plastenki pisao sam još u siječnju 1967!!!

Koje su to kemikalije koje ometaju djelovanje?.

Je li si netko postavio pitanje kakvo je opterećenje okoliša sa staklenkama. A je su li i one baš bezopasne??? Sada netko nudi aluminijske. Što se zna o njima???

6 - PS *- Plastika koja ispušta u vodu kancerogenu tvar* ***STIREN.****Najčešće se koristi u čašicama za kavu za jednokratnu uporabu, ili u ambalaži brze prehrane.*

Ovo ne ću prevoditi, provjera u Wikipedia.

Health and fire hazards of polystyrene

According to a plastic food service products website:

Based on scientific tests over five decades, government safety agencies have determined that polystyrene is safe for use in foodservice products. For example, polystyrene meets the stringent standards of the U.S. Food and Drug Administration and the European Commission/European Food Safety Authority for use in packaging to store and serve food. The Hong Kong Food and Environmental Hygiene Department recently reviewed the safety of serving various foods in polystyrene foodservice products and reached the same conclusion as the U.S. FDA.[25]

From 1999 to 2002, a comprehensive review of the potential health risks associated with exposure to styrene was conducted by a 12 member international expert panel selected by the Harvard Center for Risk Assessment. The scientists had expertise in toxicology, epidemiology, medicine, risk analysis, pharmacokinetics, and exposure assessment.

The Harvard study reported that styrene is naturally present in foods such as strawberries, beef, and spices, and is naturally produced in the processing of foods such as wine and cheese. The study also reviewed all the published data on the quantity of styrene contributing to the diet due to migration of food packaging and disposable food contact articles, and concluded

there is no cause for concern for the general public from exposure to styrene from foods or styrenic materials used in food-contact applications, such as polystyrene packaging and food service containers.[26]

Styrene oligomers in polystyrene containers used for food packaging have been found to migrate into the food.[27] Another Japanese study conducted on wild-type and AhR-null mice found that the styrene trimer, which the authors detected in cooked polystyrene container-packed instant foods, may increase thyroid hormone levels.[28]

Analiza internetskog pamfleta protiv plastike može se temeljiti, na za neke, samo na dosadnim podatcima.

Komentirani e-dopis je primjer stvaranja nepotrebnog nemira među pučanstvom, pa i oblik svojevrsnog terora.

Igor Čatić