플라스틱은 쉽게 원하는 모양으로 가공할 수 있다는 의미의 그리스어 플라스티코스(plastikos)에서 유래했으며, 열과 압력을 가해 성형할 수 있는 **합성 고분자화합물이다**. 많은 종류가 있으며, 열을 가해서 재가공이 가능한지에 따라서 열가소성수지와 열경화성수지로 나눌 수 있다. 대부분의 플라스틱은 100℃ 이상으로 가열될 때 녹거나 분해된다. 합성수지라고 한다.

위키백과

플라스틱= 합성 고분자 (高分子) 화합물

? *물질*을 구성하는 *최소의 단위*를 분자라고 지칭한다. *화학백과*

사람: 물, DNA, 단백질, 호르몬…

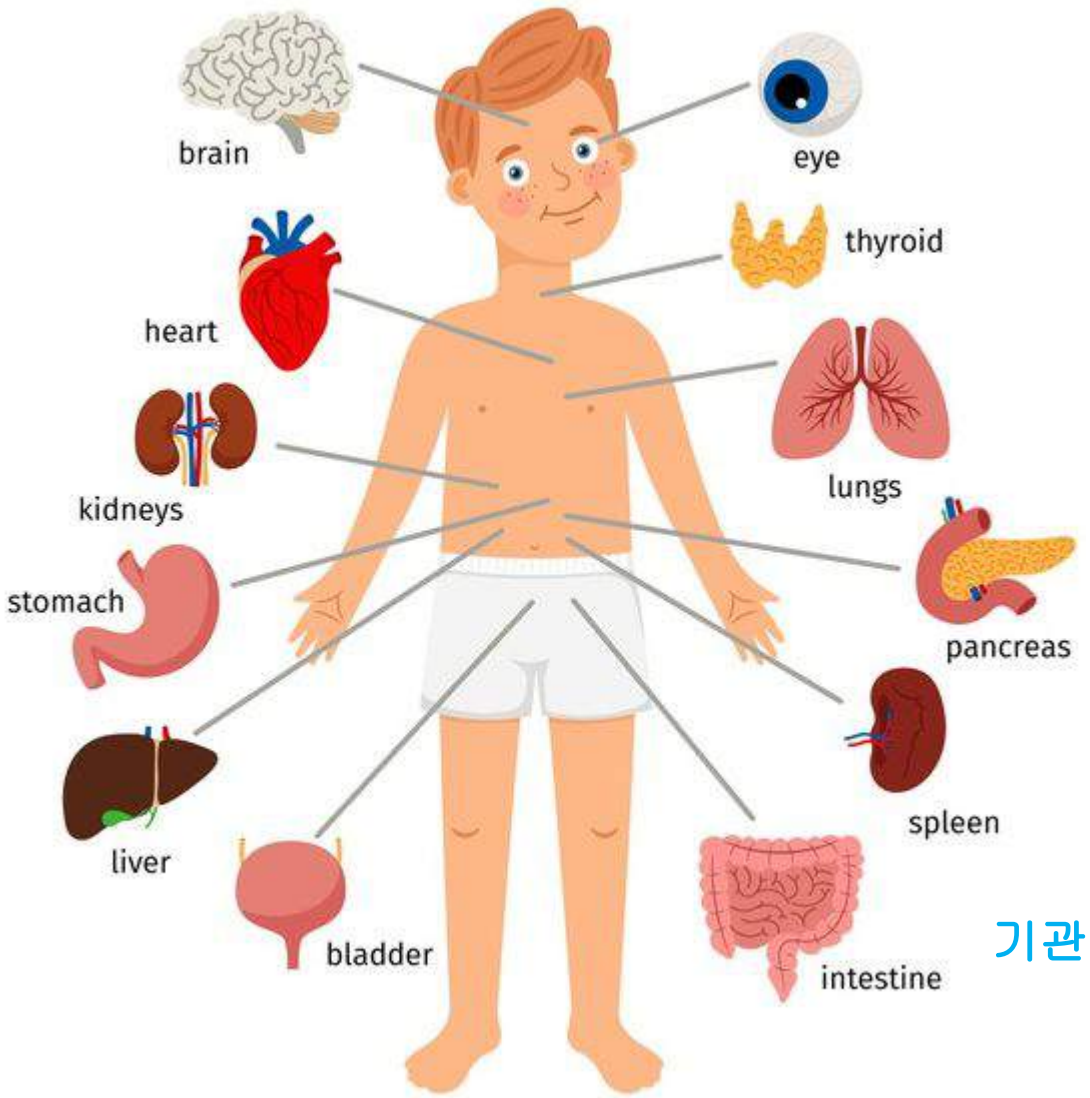
나무: 물, 산소, 이산화탄소, 셀루로즈…

눈: 물

모자, 옷, 신발: 천연 섬유, 합성 섬유…

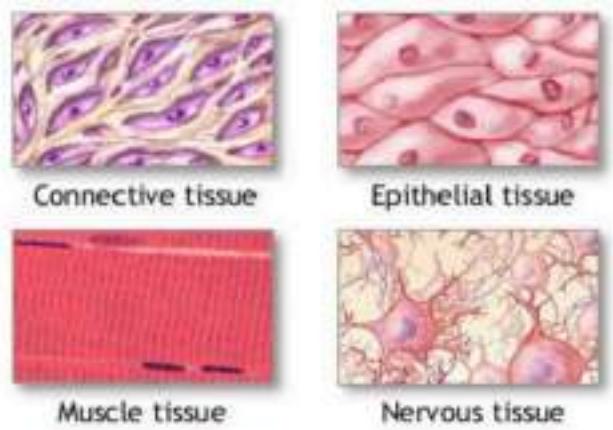
스키: 금속, 나무, 플라스틱…

피부, 근육, 뼈, 장기...

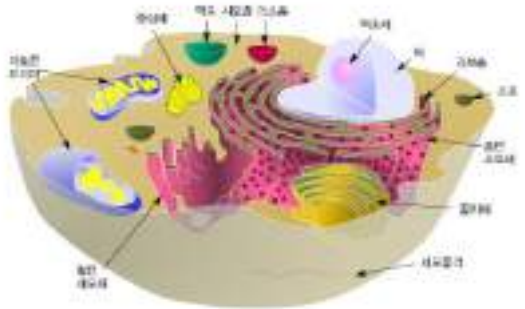


기관

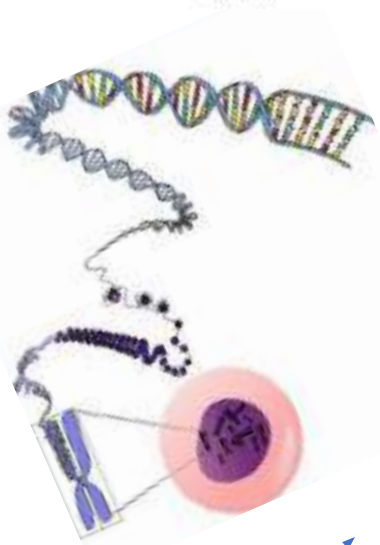
조직

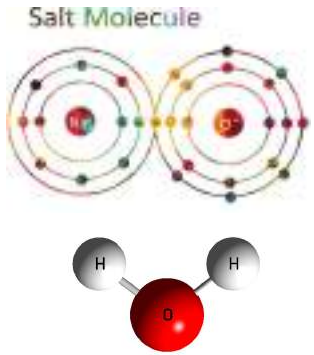


세포

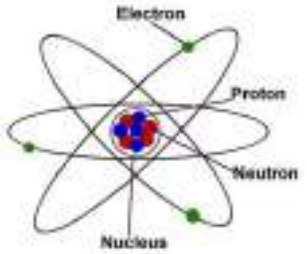


분자





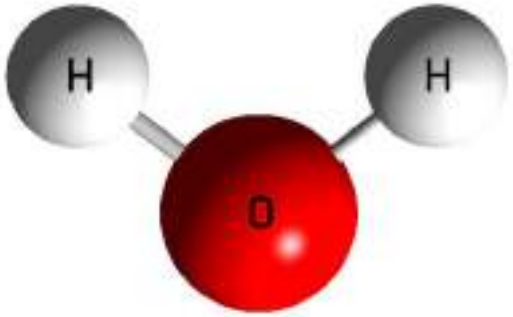
원자



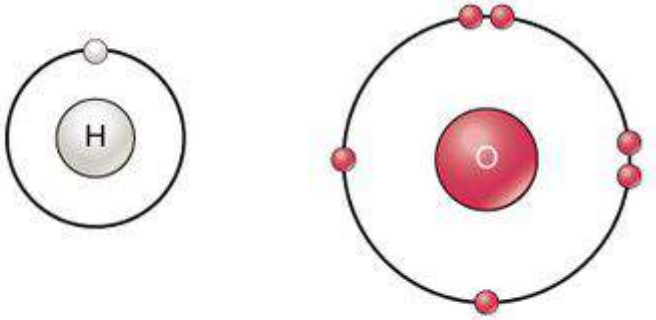
분자: 물질을 구성하는 최소의 단위
원자: 원소의 화학적 성질을 가진 최소 단위
원소?

물질: 물

물 분자: H2O

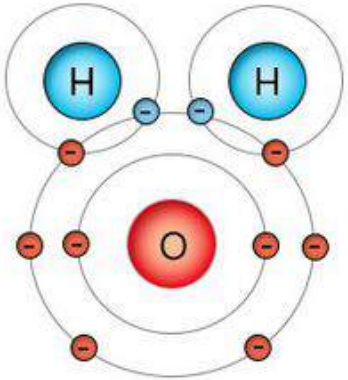


물 원자: 원소 H, 원소 O



화학은 물질의 정체와 성질을 원자와 분자의 수준에서 설명하고,
새로운 화합물을 합성하는 화학 반응의 특성을 연구한다.

$$2H_2 + O_2 \rightarrow 2\,H_2O$$



PERIODIC TABLE

Atomic Properties of the Elements

NIST National Institute of Standards and Technology
U.S. Department of Commerce

Physical Measurement Laboratory www.nist.gov/pml
Standard Reference Data www.nist.gov/srd

FREQUENTLY USED FUNDAMENTAL PHYSICAL CONSTANTS§

1 second = 9 192 631 770 periods of radiation corresponding to the transition between the two hyperfine levels of the ground state of ^{133}Cs

speed of light in vacuum	c	299 792 458 m s^{-1}	(exact)
Planck constant	h	6.626 070 x 10^{-34} J s	
elementary charge	e	1.602 177 x 10^{-19} C	
electron mass	m_e	9.109 384 x 10^{-31} kg	
	$m_e c^2$	0.510 999 MeV	
proton mass	m_p	1.672 622 x 10^{-27} kg	
fine-structure constant	α	1/137.035 999	
Rydberg constant	R_∞	10 973 731.569 m^{-1}	
	$R_\infty c$	3.289 841 960 x 10^{15} Hz	
	$R_\infty hc$	13.605 693 eV	
electron volt	eV	1.602 177 x 10^{-19} J	
Boltzmann constant	k	1.380 65 x 10^{-23} J K^{-1}	
molar gas constant	R	8.314 5 J mol^{-1} K^{-1}	

§ For the most accurate values of these and other constants, visit pml.nist.gov/constants.

Solids
Liquids
Gases
Artificially Prepared

Group 1 IA | 2 IIA | 3 IIIB | 4 IVB | 5 VB | 6 VIB | 7 VIIB | 8 | 9 | 10 VIII | 11 IB | 12 IIB | 13 IIIA | 14 IVA | 15 VA | 16 VIA | 17 VIIA | 18 VIIIA

Period

Period	1 IA	2 IIA	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8	9	10 VIII	11 IB	12 IIB	13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIIIA
1	1 $^2S_{1/2}$ **H** Hydrogen 1.008 1s 13.5984																	2 $^1S_0$ **He** Helium 4.0026 1s^2 24.5874
2	3 $^2S_{1/2}$ **Li** Lithium 6.94 1s^{2}2s 5.3917	4 $^1S_0$ **Be** Beryllium 9.0122 1s^{2}2s^2 9.3227											5 $^2P^o_{1/2}$ **B** Boron 10.81 1s^{2}2s^{2}2p 8.2980	6 $^3P_0$ **C** Carbon 12.011 1s^{2}2s^{2}2p^2 11.2603	7 $^4S^o_{3/2}$ **N** Nitrogen 14.007 1s^{2}2s^{2}2p^3 14.5341	8 $^3P_2$ **O** Oxygen 15.999 1s^{2}2s^{2}2p^4 13.6181	9 $^2P^o_{3/2}$ **F** Fluorine 18.998 1s^{2}2s^{2}2p^5 17.4228	10 $^1S_0$ **Ne** Neon 20.180 1s^{2}2s^{2}2p^6 21.5645
3	11 $^2S_{1/2}$ **Na** Sodium 22.990 [Ne]3s 5.1391	12 $^1S_0$ **Mg** Magnesium 24.305 [Ne]3s^2 7.6462											13 $^2P^o_{1/2}$ **Al** Aluminum 26.982 [Ne]3s^{2}3p 5.9858	14 $^3P_0$ **Si** Silicon 28.085 [Ne]3s^{2}3p^2 8.1517	15 $^4S^o_{3/2}$ **P** Phosphorus 30.974 [Ne]3s^{2}3p^3 10.4867	16 $^3P_2$ **S** Sulfur 32.06 [Ne]3s^{2}3p^4 10.3600	17 $^2P^o_{3/2}$ **Cl** Chlorine 35.45 [Ne]3s^{2}3p^5 12.9676	18 $^1S_0$ **Ar** Argon 39.948 [Ne]3s^{2}3p^6 15.7596
4	19 $^2S_{1/2}$ **K** Potassium 39.098 [Ar]4s 4.3407	20 $^1S_0$ **Ca** Calcium 40.078 [Ar]4s^2 6.1132	21 $^2D_{3/2}$ **Sc** Scandium 44.956 [Ar]3d4s^2 6.5615	22 $^3F_2$ **Ti** Titanium 47.867 [Ar]3d^{2}4s^2 6.8281	23 $^4F_{3/2}$ **V** Vanadium 50.942 [Ar]3d^{3}4s^2 6.7462	24 $^7S_3$ **Cr** Chromium 51.996 [Ar]3d^{5}4s 6.7665	25 $^6S_{5/2}$ **Mn** Manganese 54.938 [Ar]3d^{5}4s^2 7.4340	26 $^5D_4$ **Fe** Iron 55.845 [Ar]3d^{6}4s^2 7.9025	27 $^4F_{9/2}$ **Co** Cobalt 58.933 [Ar]3d^{7}4s^2 7.8810	28 $^3F_4$ **Ni** Nickel 58.693 [Ar]3d^{8}4s^2 7.6399	29 $^2S_{1/2}$ **Cu** Copper 63.546 [Ar]3d^{10}4s 7.7264	30 $^1S_0$ **Zn** Zinc 65.38 [Ar]3d^{10}4s^2 9.3942	31 $^2P^o_{1/2}$ **Ga** Gallium 69.723 [Ar]3d^{10}4s^{2}4p 5.9993	32 $^3P_0$ **Ge** Germanium 72.630 [Ar]3d^{10}4s^{2}4p^2 7.8994	33 $^4S^o_{3/2}$ **As** Arsenic 74.922 [Ar]3d^{10}4s^{2}4p^3 9.7886	34 $^3P_2$ **Se** Selenium 78.971 [Ar]3d^{10}4s^{2}4p^4 9.7524	35 $^2P^o_{3/2}$ **Br** Bromine 79.904 [Ar]3d^{10}4s^{2}4p^5 11.8138	36 $^1S_0$ **Kr** Krypton 83.798 [Ar]3d^{10}4s^{2}4p^6 13.9996
5	37 $^2S_{1/2}$ **Rb** Rubidium 85.468 [Kr]5s 4.1771	38 $^1S_0$ **Sr** Strontium 87.62 [Kr]5s^2 5.6949	39 $^2D_{3/2}$ **Y** Yttrium 88.906 [Kr]4d5s^2 6.2173	40 $^3F_2$ **Zr** Zirconium 91.224 [Kr]4d^{2}5s^2 6.6341	41 $^6D_{1/2}$ **Nb** Niobium 92.906 [Kr]4d^{4}5s 6.7589	42 $^7S_3$ **Mo** Molybdenum 95.95 [Kr]4d^{5}5s 7.0924	43 $^6S_{5/2}$ **Tc** Technetium (98) [Kr]4d^{5}5s^2 7.1194	44 $^5F_5$ **Ru** Ruthenium 101.07 [Kr]4d^{7}5s 7.3605	45 $^4F_{9/2}$ **Rh** Rhodium 102.91 [Kr]4d^{8}5s 7.4589	46 $^1S_0$ **Pd** Palladium 106.42 [Kr]4d^{10} 8.3369	47 $^2S_{1/2}$ **Ag** Silver 107.87 [Kr]4d^{10}5s 7.5762	48 $^1S_0$ **Cd** Cadmium 112.41 [Kr]4d^{10}5s^2 8.9938	49 $^2P^o_{1/2}$ **In** Indium 114.82 [Kr]4d^{10}5s^{2}5p 5.7864	50 $^3P_0$ **Sn** Tin 118.71 [Kr]4d^{10}5s^{2}5p^2 7.3439	51 $^4S^o_{3/2}$ **Sb** Antimony 121.76 [Kr]4d^{10}5s^{2}5p^3 8.6084	52 $^3P_2$ **Te** Tellurium 127.60 [Kr]4d^{10}5s^{2}5p^4 9.0097	53 $^2P^o_{3/2}$ **I** Iodine 126.90 [Kr]4d^{10}5s^{2}5p^5 10.4513	54 $^1S_0$ **Xe** Xenon 131.29 [Kr]4d^{10}5s^{2}5p^6 12.1298
6	55 $^2S_{1/2}$ **Cs** Cesium 132.91 [Xe]6s 3.8939	56 $^1S_0$ **Ba** Barium 137.33 [Xe]6s^2 5.2117	72 $^3F_2$ **Hf** Hafnium 178.49 [Xe]4f^{14}5d^{2}6s^2 6.8251	73 $^4F_{3/2}$ **Ta** Tantalum 180.95 [Xe]4f^{14}5d^{3}6s^2 7.5496	74 $^5D_0$ **W** Tungsten 183.84 [Xe]4f^{14}5d^{4}6s^2 7.8640	75 $^6S_{5/2}$ **Re** Rhenium 186.21 [Xe]4f^{14}5d^{5}6s^2 7.8335	76 $^5D_4$ **Os** Osmium 190.23 [Xe]4f^{14}5d^{6}6s^2 8.4382	77 $^4F_{9/2}$ **Ir** Iridium 192.22 [Xe]4f^{14}5d^{7}6s^2 8.9670	78 $^3D_3$ **Pt** Platinum 195.08 [Xe]4f^{14}5d^{9}6s 8.9588	79 $^2S_{1/2}$ **Au** Gold 196.97 [Xe]4f^{14}5d^{10}6s 9.2256	80 $^1S_0$ **Hg** Mercury 200.59 [Xe]4f^{14}5d^{10}6s^2 10.4375	81 $^2P^o_{1/2}$ **Tl** Thallium 204.38 [Hg]6p 6.1083	82 $^3P_0$ **Pb** Lead 207.2 [Hg]6p^2 7.4167	83 $^4S^o_{3/2}$ **Bi** Bismuth 208.98 [Hg]6p^3 7.2855	84 $^3P_2$ **Po** Polonium (209) [Hg]6p^4 8.414	85 $^2P^o_{3/2}$ **At** Astatine (210) [Hg]6p^5 9.3175	86 $^1S_0$ **Rn** Radon (222) [Hg]6p^6 10.7485
7	87 $^2S_{1/2}$ **Fr** Francium (223) [Rn]7s 4.0727	88 $^1S_0$ **Ra** Radium (226) [Rn]7s^2 5.2784	104 $^3F_2$ **Rf** Rutherfordium (267) [Rn]5f^{14}6d^{2}7s^2 6.02	105 $^4F_{3/2}$ **Db** Dubnium (268) [Rn]5f^{14}6d^{3}7s^2 6.8	106 ^{0} **Sg** Seaborgium (271) [Rn]5f^{14}6d^{4}7s^2 7.8	107 $^{5/2}$ **Bh** Bohrium (270) [Rn]5f^{14}6d^{5}7s^2 7.7	108 ^{4} **Hs** Hassium (269) [Rn]5f^{14}6d^{6}7s^2 7.6	109 **Mt** Meitnerium (278)	110 **Ds** Darmstadtium (281)	111 **Rg** Roentgenium (282)	112 **Cn** Copernicium (285)	113 **Nh** Nihonium (286)	114 **Fl** Flerovium (289)	115 **Mc** Moscovium (289)	116 **Lv** Livermorium (293)	117 **Ts** Tennessine (294)	118 **Og** Oganesson (294)

Lanthanides	57 $^2D_{3/2}$ **La** Lantharum 138.91 [Xe]5d6s^2 5.5769	58 $^1G^o_4$ **Ce** Cerium 140.116 [Xe]4f5d6s^2 5.5386	59 $^4I^o_{9/2}$ **Pr** Praseodymium 140.91 [Xe]4f^{3}6s^2 5.4702	60 $^5I_4$ **Nd** Neodymium 144.24 [Xe]4f^{4}6s^2 5.5250	61 $^6H^o_{5/2}$ **Pm** Promethium (145) [Xe]4f^{5}6s^2 5.577	62 $^7F_0$ **Sm** Samarium 150.36 [Xe]4f^{6}6s^2 5.6437	63 $^8S^o_{7/2}$ **Eu** Europium 151.96 [Xe]4f^{7}6s^2 5.6704	64 $^9D^o_2$ **Gd** Gadolinium 157.25 [Xe]4f^{7}5d6s^2 6.1498	65 $^6H^o_{15/2}$ **Tb** Terbium 158.93 [Xe]4f^{9}6s^2 5.8638	66 $^5I_8$ **Dy** Dysprosium 162.50 [Xe]4f^{10}6s^2 5.9391	67 $^4I^o_{15/2}$ **Ho** Holmium 164.93 [Xe]4f^{11}6s^2 6.0215	68 $^3H_6$ **Er** Erbium 167.26 [Xe]4f^{12}6s^2 6.1077	69 $^2F^o_{7/2}$ **Tm** Thulium 168.93 [Xe]4f^{13}6s^2 6.1843	70 $^1S_0$ **Yb** Ytterbium 173.05 [Xe]4f^{14}6s^2 6.2542	71 $^2D_{3/2}$ **Lu** Lutetium 174.97 [Xe]4f^{14}5d6s^2 5.4259
Actinides	89 $^2D_{3/2}$ **Ac** Actinium (227) [Rn]6d7s^2 5.3802	90 $^3F_2$ **Th** Thorium 232.04 [Rn]6d^{2}7s^2 6.3067	91 $^4K_{11/2}$ **Pa** Protactinium 231.04 [Rn]5f^{2}6d7s^2 5.89	92 $^5L^o_6$ **U** Uranium 238.03 [Rn]5f^{3}6d7s^2 6.1941	93 $^6L_{11/2}$ **Np** Neptunium (237) [Rn]5f^{4}6d7s^2 6.2655	94 $^7F_0$ **Pu** Plutonium (244) [Rn]5f^{6}7s^2 6.0258	95 $^8S^o_{7/2}$ **Am** Americium (243) [Rn]5f^{7}7s^2 5.9738	96 $^9D^o_2$ **Cm** Curium (247) [Rn]5f^{7}6d7s^2 5.9914	97 $^6H^o_{15/2}$ **Bk** Berkelium (247) [Rn]5f^{9}7s^2 6.1978	98 $^5I_8$ **Cf** Californium (251) [Rn]5f^{10}7s^2 6.2817	99 $^4I^o_{15/2}$ **Es** Einsteinium (252) [Rn]5f^{11}7s^2 6.3676	100 $^3H_6$ **Fm** Fermium (257) [Rn]5f^{12}7s^2 6.50	101 $^2F^o_{7/2}$ **Md** Mendelevium (258) [Rn]5f^{13}7s^2 6.58	102 $^1S_0$ **No** Nobelium (259) [Rn]5f^{14}7s^2 6.66	103 $^2P^o_{1/2}$ **Lr** Lawrencium (266) [Rn]5f^{14}7s^{2}7p 4.96

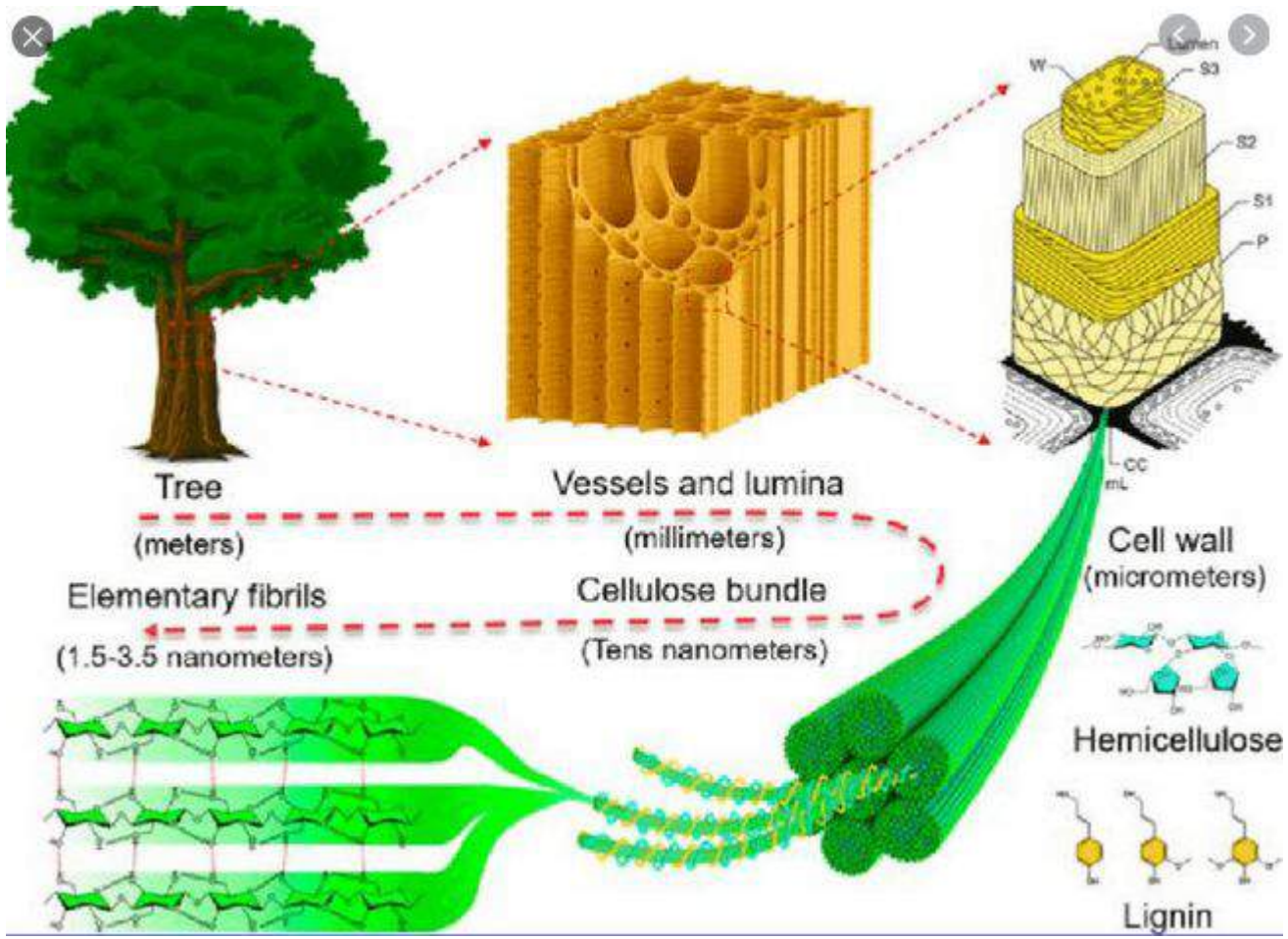
Atomic Number
Symbol
Name
Standard Atomic Weight† (Da)
Ground-state Configuration
Ground State
Ionization Energy (eV)

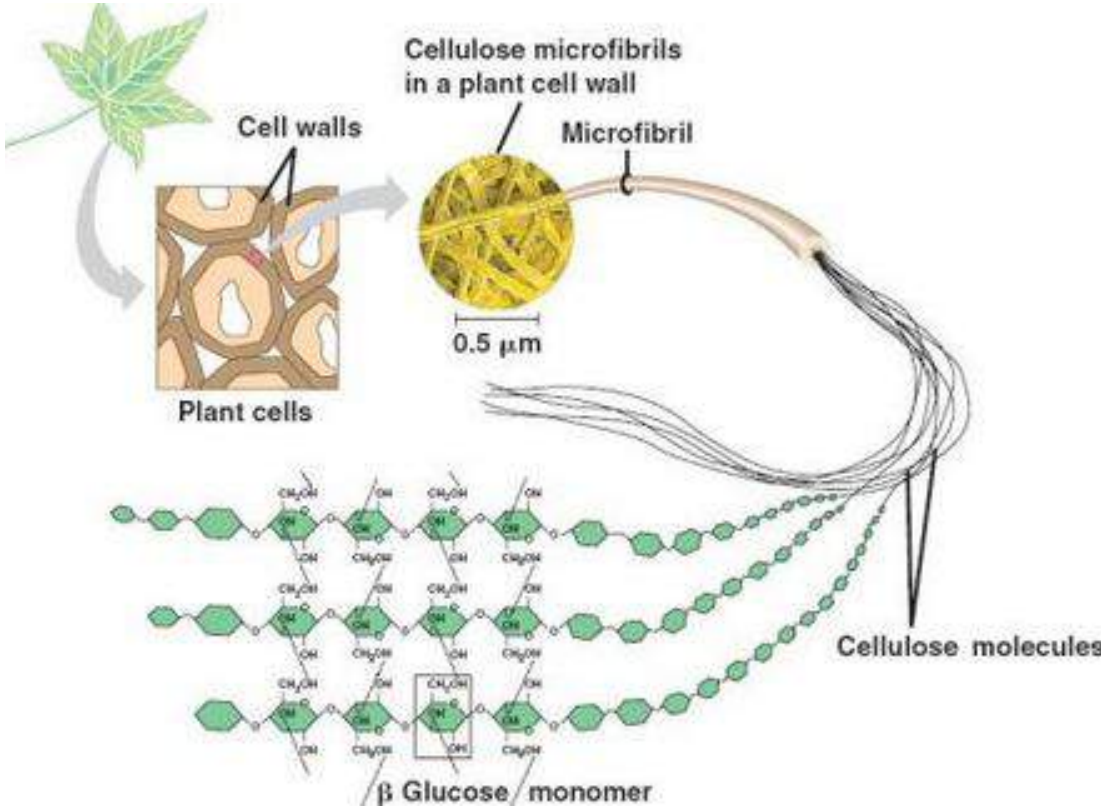
58 $^1G^o_4$ **Ce** Cerium 140.12 [Xe]4f5d6s^2 5.5386

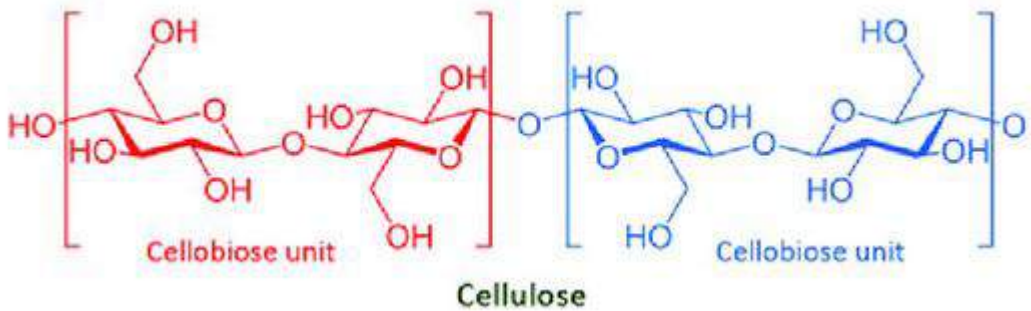
†Based upon ^{12}C. () indicates the mass number of the longest-lived isotope.

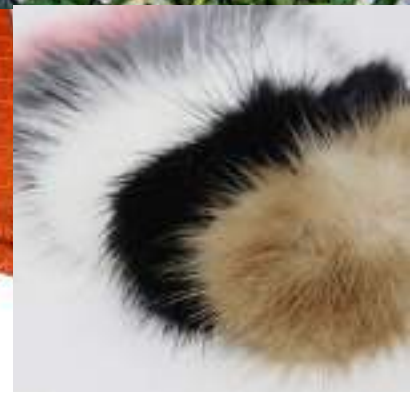
For the most precise values and uncertainties visit ciaaw.org and pml.nist.gov/data.

NIST SP 966 (July 2018)


Tree
(meters)
Vessels and lumina
(millimeters)
Elementary fibrils
(1.5-3.5 nanometers)
Cellulose bundle
(Tens nanometers)
Cell wall
(micrometers)
Hemicellulose
Lignin


Cellulose microfibrils
in a plant cell wall
Cell walls
Microfibril
0.5 μm
Plant cells
Cellulose molecules
β Glucose monomer

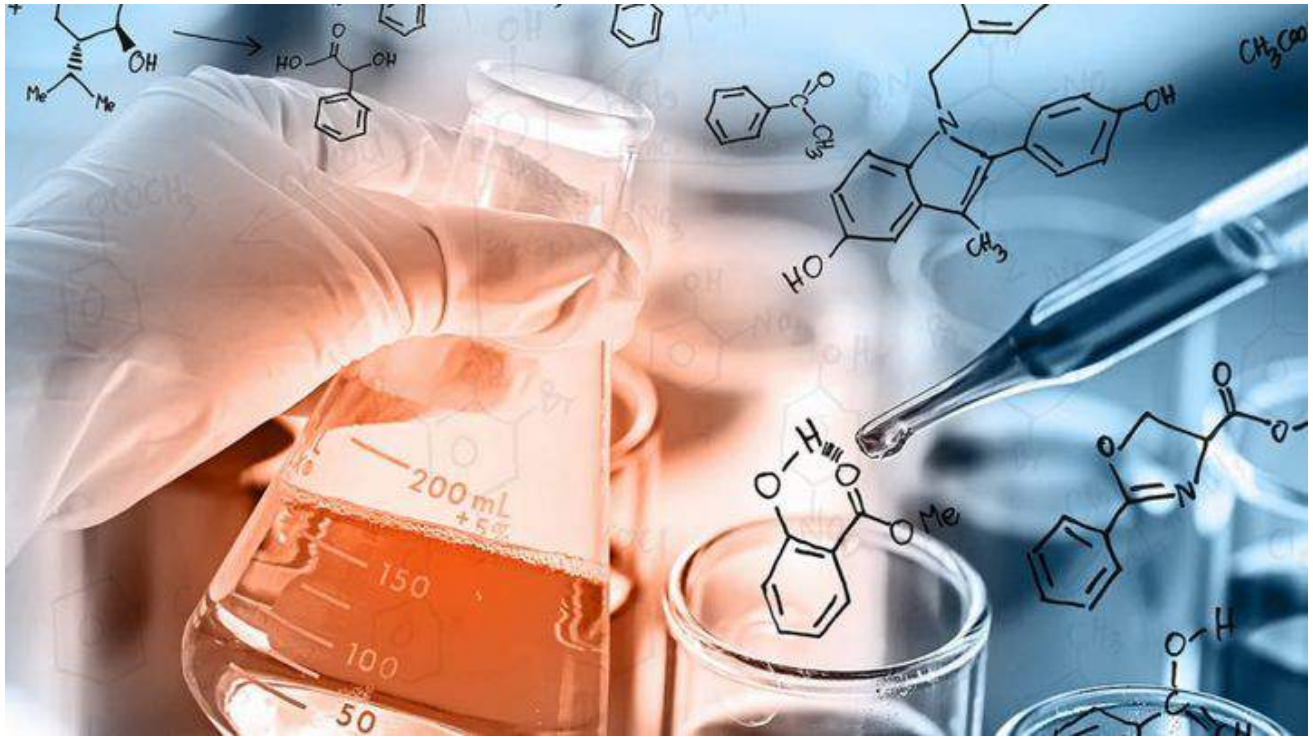

Cellobiose unit
Cellobiose unit
Cellulose

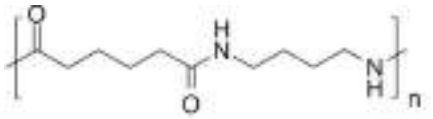


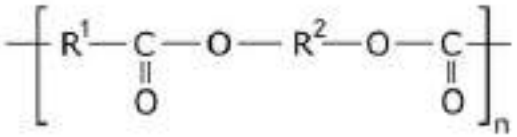
자연을 회손하지 않으며,

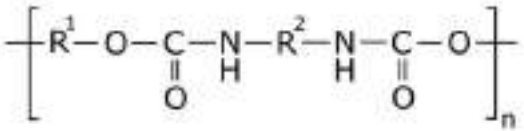
싸고 질 좋은 합성섬유!

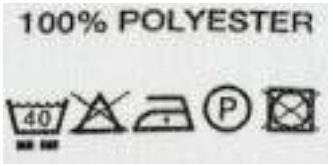
합성 섬유= 합성 고분자 섬유

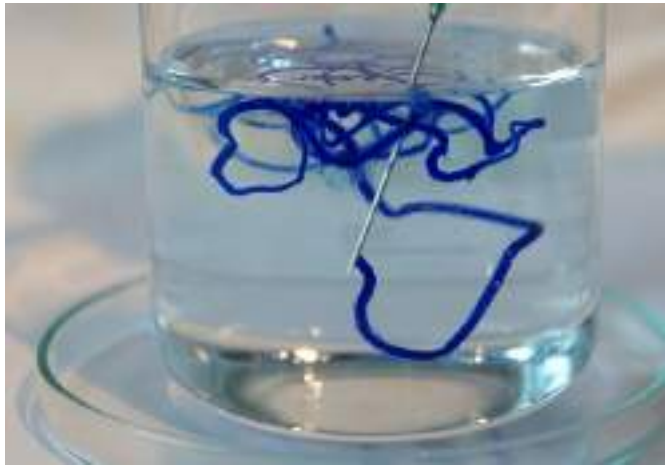


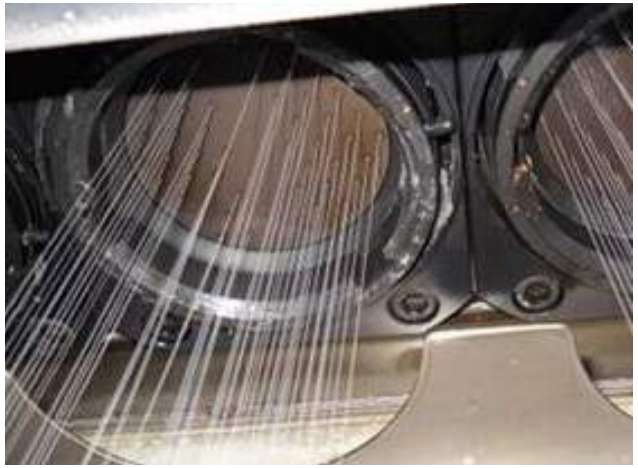








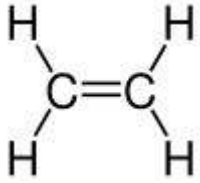




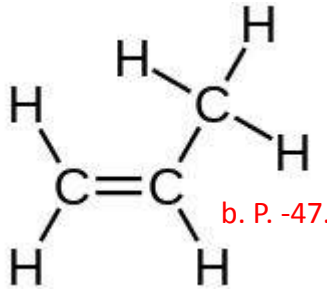
고분자 합성 (플라스틱 만들기)

에틸렌, 프로필렌, 부탄, 방향족…

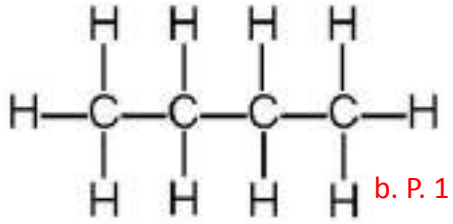
b.P. 80 °C



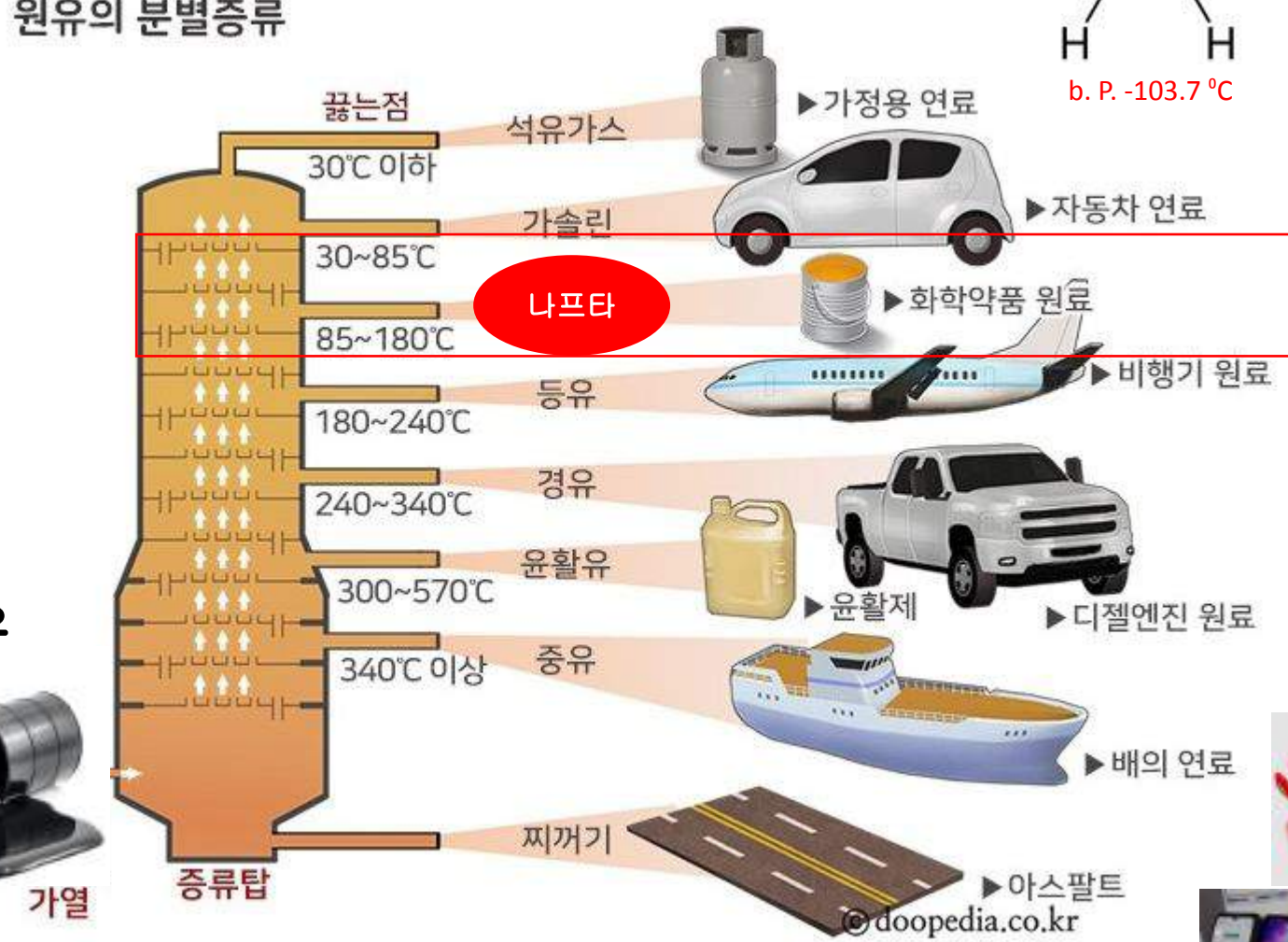
b. P. -103.7 °C



b. P. -47.6 °C

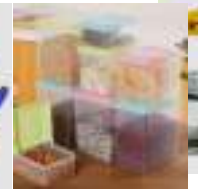


b. P. 1 °C



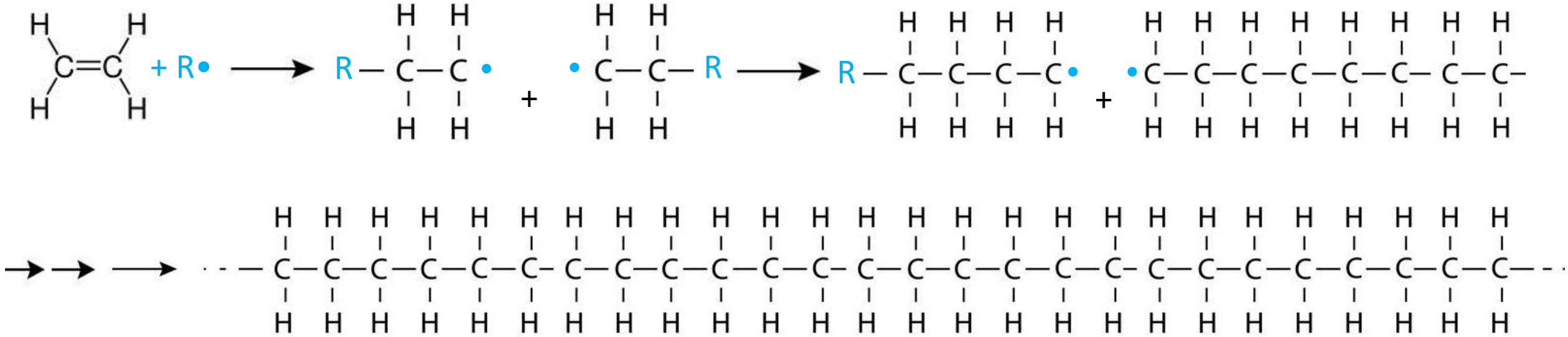
석유 화학 공업의 원료!

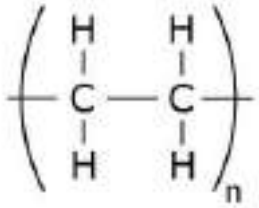
합성



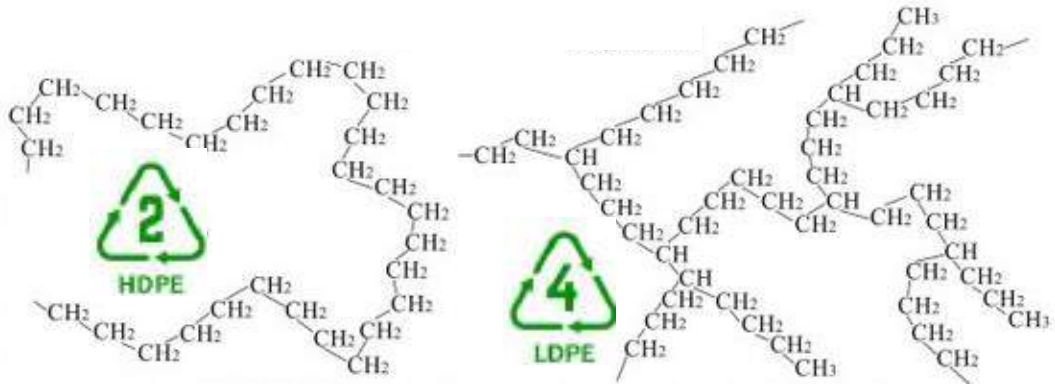
… 너무 많다!

고분자 합성 (polymerization, 중합)





폴리에틸렌 (Polyethylne)



THE 7 TYPES OF PLASTICS

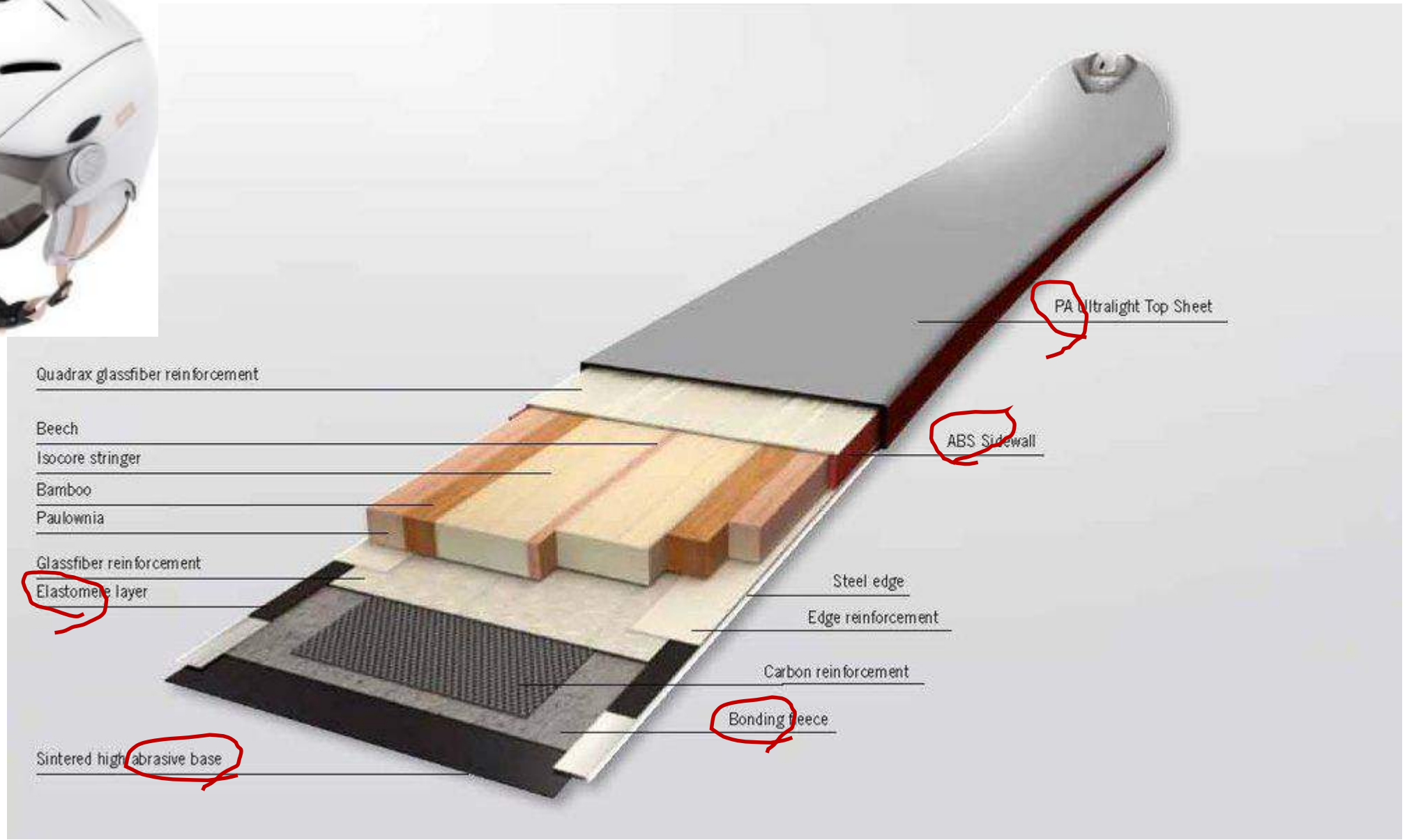
THEIR TOXICITY AND WHAT THEY ARE MOST COMMONLY USED FOR

TOXICITY CODE: ⚠ LOW ☠ HIGH

Polymer Name	POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	All other plastics, including acrylic, fiberglass, nylon, polycarbonate, and polylactic acid (a bioplastic)
Resin Identification Code	1	2	3	4	5	6	7
Abbreviation	PET or PETE	HDPE	PVC	LDPE	PP	PS	OTHER
Recyclable?	Commonly Recycled	Commonly Recycled	Sometimes Recycled	Sometimes Recycled	Occasionally Recycled	Commonly Recycled (but difficult to do)	Difficult to Recycle
Percentage Recycled Annually	36%	30-35%	<1%	6%	3%	34%	Low
How Long to Decompose Under Perfect Conditions	5-10 Years	100 Years	Never	500-1,000 Years	20-30 Years	50 Years	Majority of these plastics: never Polylactic acid: 6 months
Maximum Temperature	70°C (158°F)	120°C (248°F)	70°C (158°F)	80°C (176°F)	135°C (275°F)	90°C (194°F)	Polycarbonate: 135°C (275°F) Polylactic acid: 150°C (302°F)
Brittleness Temperature	-40°C (-40°F)	-100°C (-148°F)	-30°C (-22°F)	-100°C (-148 °F)	0°C (32°F)	-20°C (-4°F)	Polycarbonate: -135°C (-211°F) Polylactic acid: 60°C (140°F)
Toxicity Level	☠	⚠	☠	⚠	⚠	☠	☠
Most Commonly Leached Toxin(s)	Antimony Oxide, Bromine, Diazomethane, Lead Oxide, Nickel, Ethylene Oxide, and Benzene	Chromium Oxide, Benzoyl Peroxide, Hexane, and Cyclohexane	Benzene, Carbon Tetrachloride, 1,2-Dichloroethane, Phthalates, Ethylene Oxide, Lead Chromate, Methyl Acrylate, Methanol, Phthalic Anhydride, Tetrahydrofuran, and Tribasic Lead Sulfate, Mercury, Cadmium, Bisphenol A (BPA)	Benzene, Chromium Oxide, Cumene Hydroperoxide, And Tert-butyl Hydroperoxide	Methanol, 2,6-di-tert-Butyl-4-Methyl Phenol, and Nickel Dibutyl Dithiocarbamate	Styrene, Ethylbenzene, Benzene, Ethylene, Carbon Tetrachloride, Polyvinyl Alcohol, Antimony Oxide, and Tert-butyl Hydroperoxide, Benzoquinone	BPA, BPS, as well as all other toxins mentioned

http://www.keco.or.kr/group/group02/main/index.do

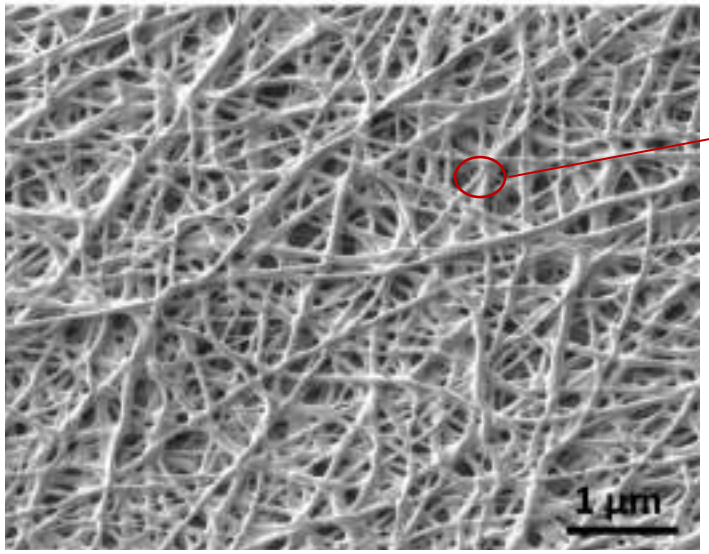
https://www.alansfactoryoutlet.com/7-types-of-plastics-their-toxicity-and-most-commonly-used-for

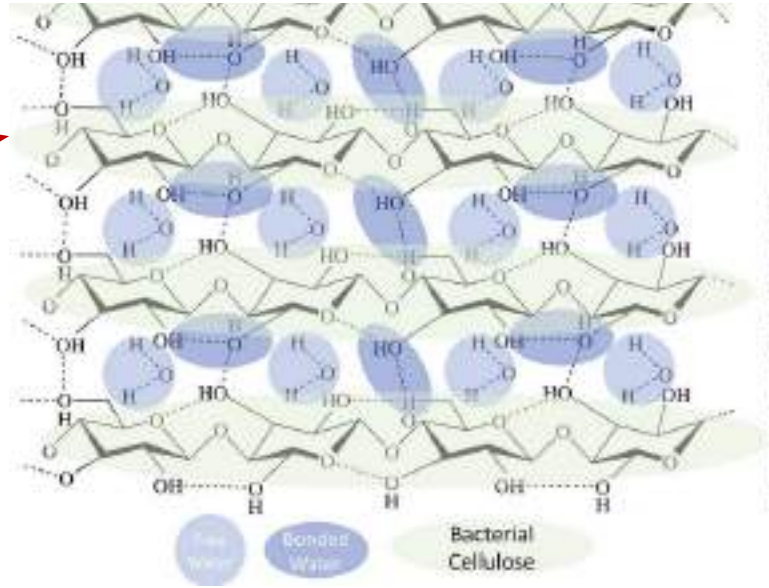


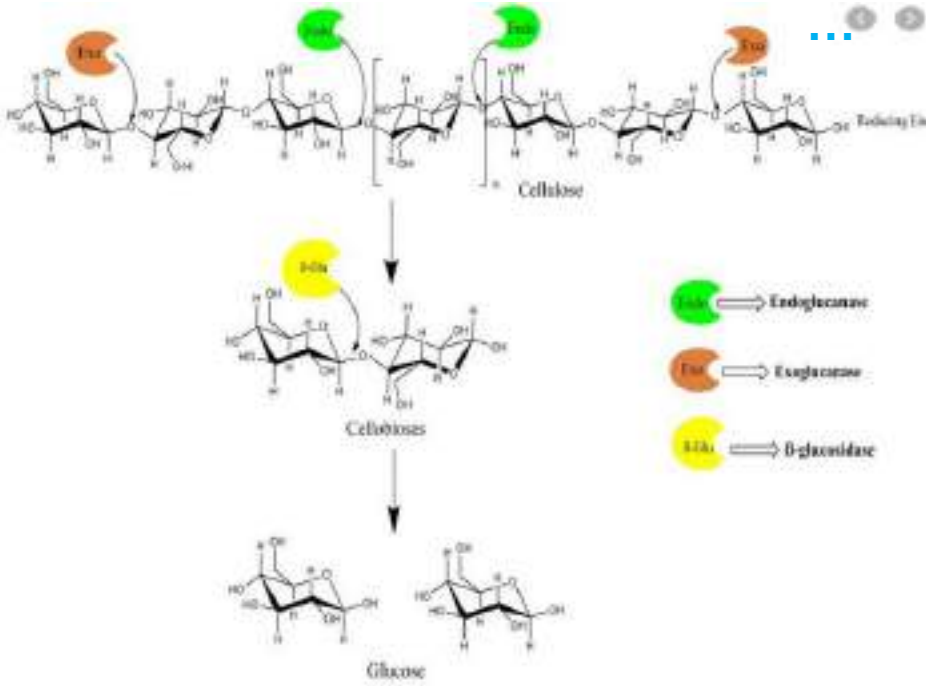
https://www.skiinfo.de/news/photo/585765/skikonstruktion-id138165

플라스틱은 왜 분해되는 것에 오랜 시간이 걸릴까?

미생물
물
온도
pH
햇빛
바람
...

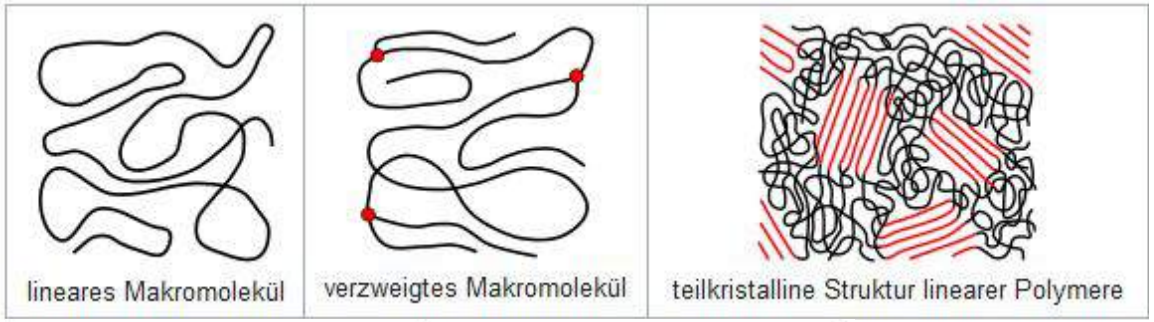


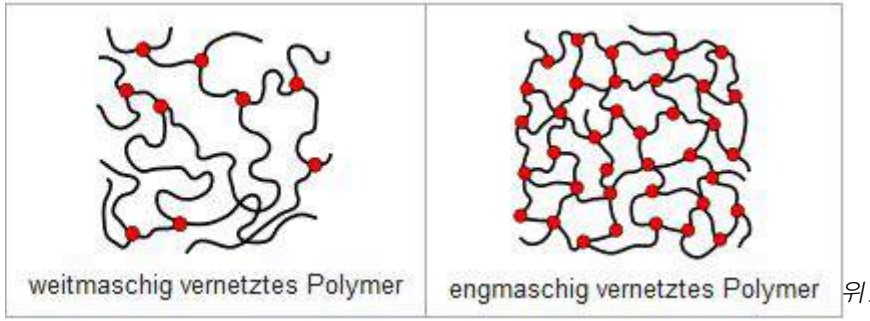




Biotechnology, 12, 586–610

플라스틱은 왜 분해되는 것에 오랜 시간이 걸릴까?





위키백과

미생물

물

온도

pH

햇빛

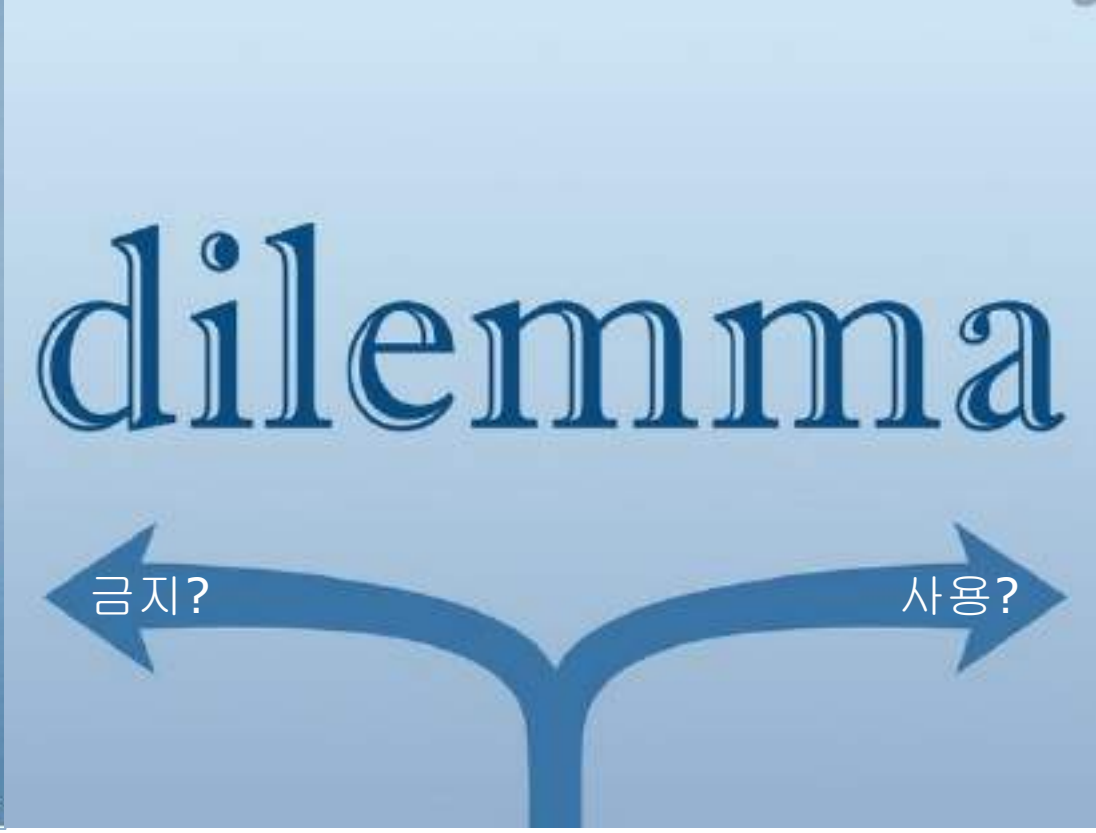
바람

…

분해되어 더 유해한 물질로!

https://en.reset.org/knowledge/plastic-ocean-great-pacific-garbage-patch


Plastic & Climate
THE HIDDEN COSTS OF A PLASTIC PLANET



우리가 할 수 있는 것은?

Government

Academia

Industry

Non-governmental organizations

Einweg-Plastik wird verboten

Trinkhalme, Rührstäbchen für den Kaffee, Einweg-Geschirr aus konventionellem Plastik und aus "Bioplastik" sowie To-go-Becher und Einweg-Behälter aus Styropor sollen verboten werden. Das hat das Bundeskabinett beschlossen. Nach dem Bundestag hat am 6. November auch der Bundesrat zugestimmt.

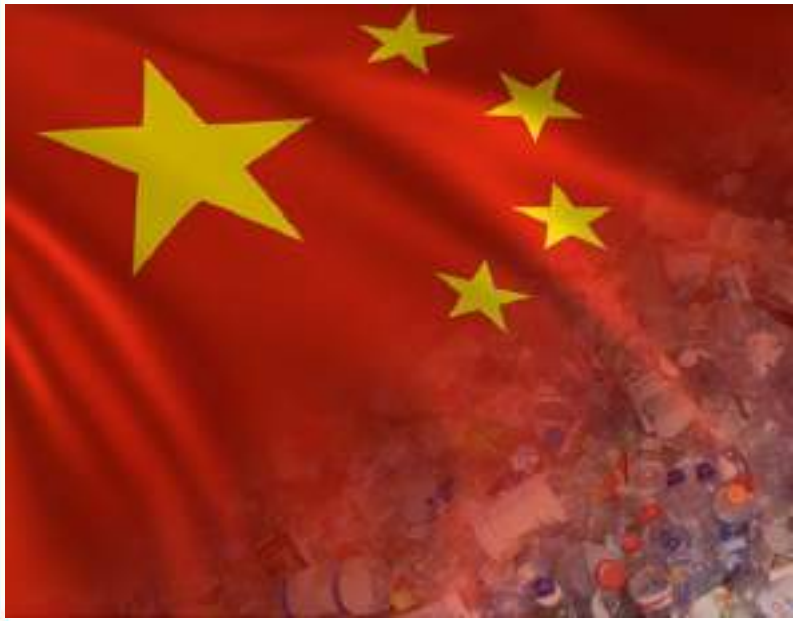
Diese Kunststoff-Artikel dürfen nicht mehr verkauft werden*

To-go-Becher | Einweg-Geschirr | Fast-Food-Verpackung | Trinkhalme | Rühr- und Wattestäbchen

*ausgewählte Produkte

플라스틱 오염: 캐나다가 2021년부터 일회용 플라스틱 사용을 금지한다

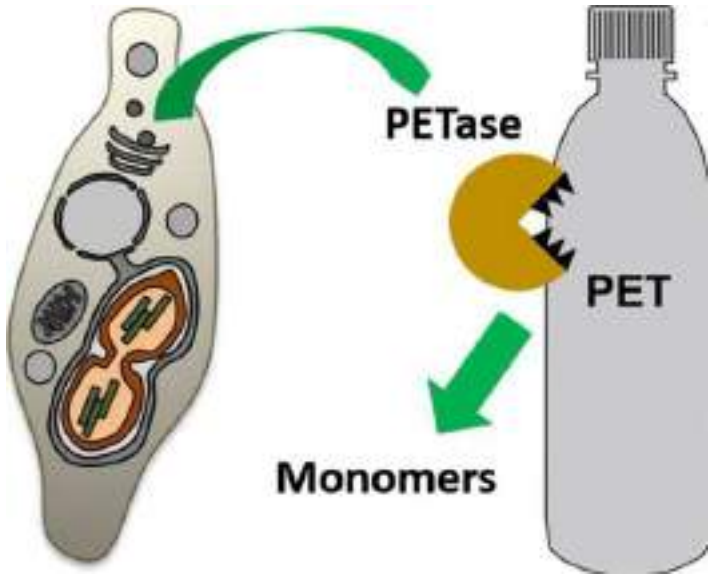
2019년 6월 11일

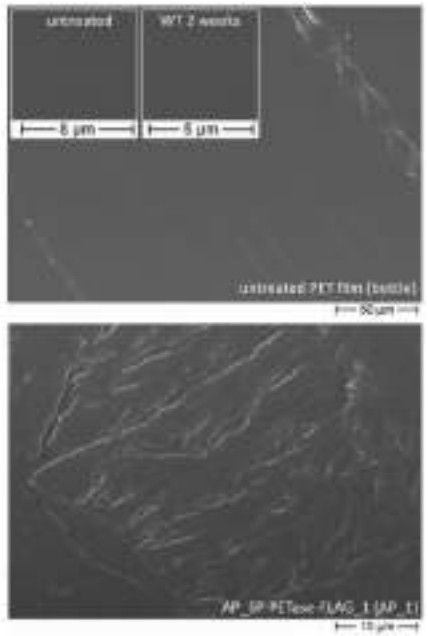


NO 플라스틱?
SO 판타스틱!

서울특별시 서대문구

이렇게 버리면됩니다!



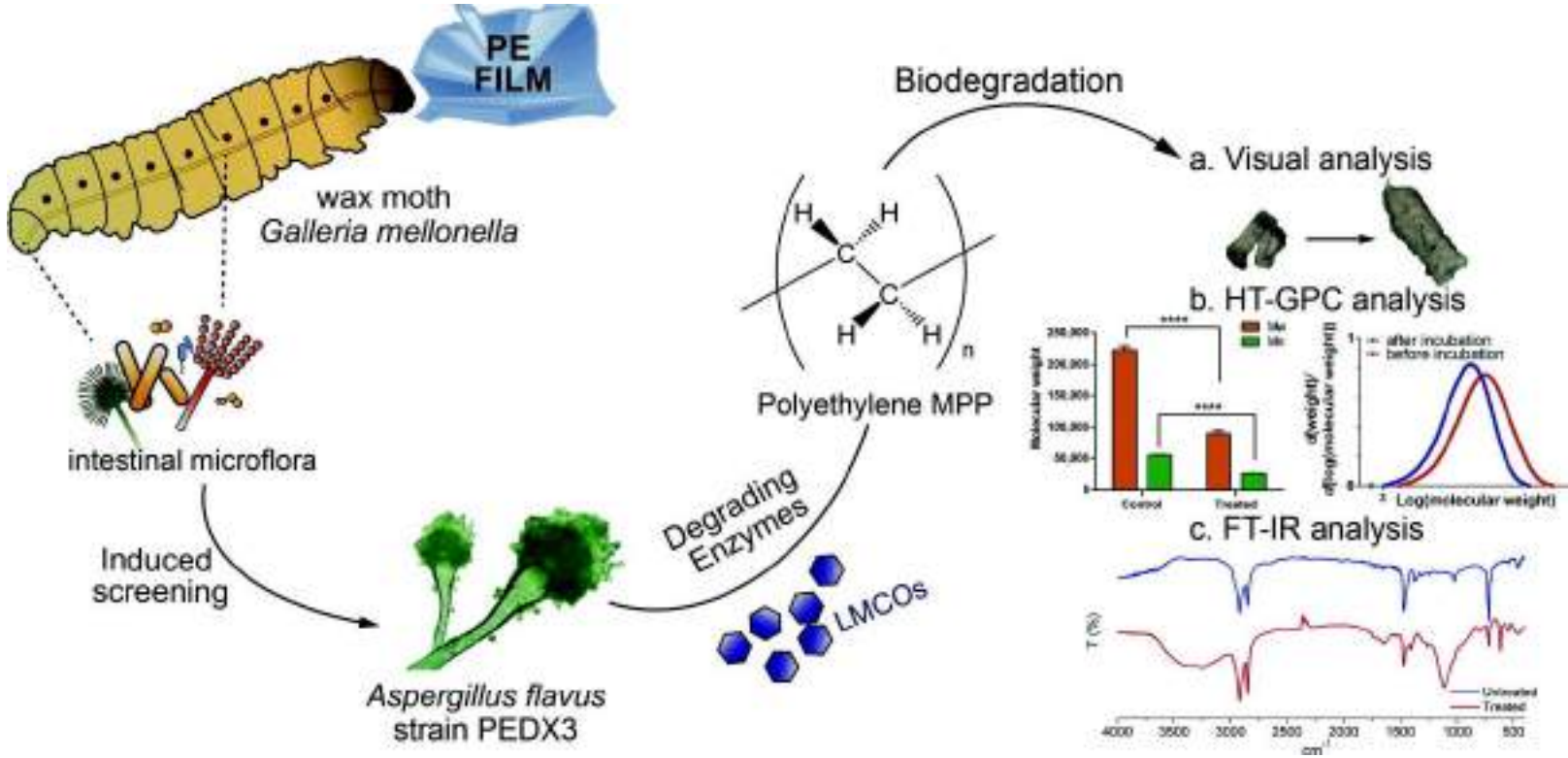


Moog et al. Microb Cell Fact (2019) 18:171

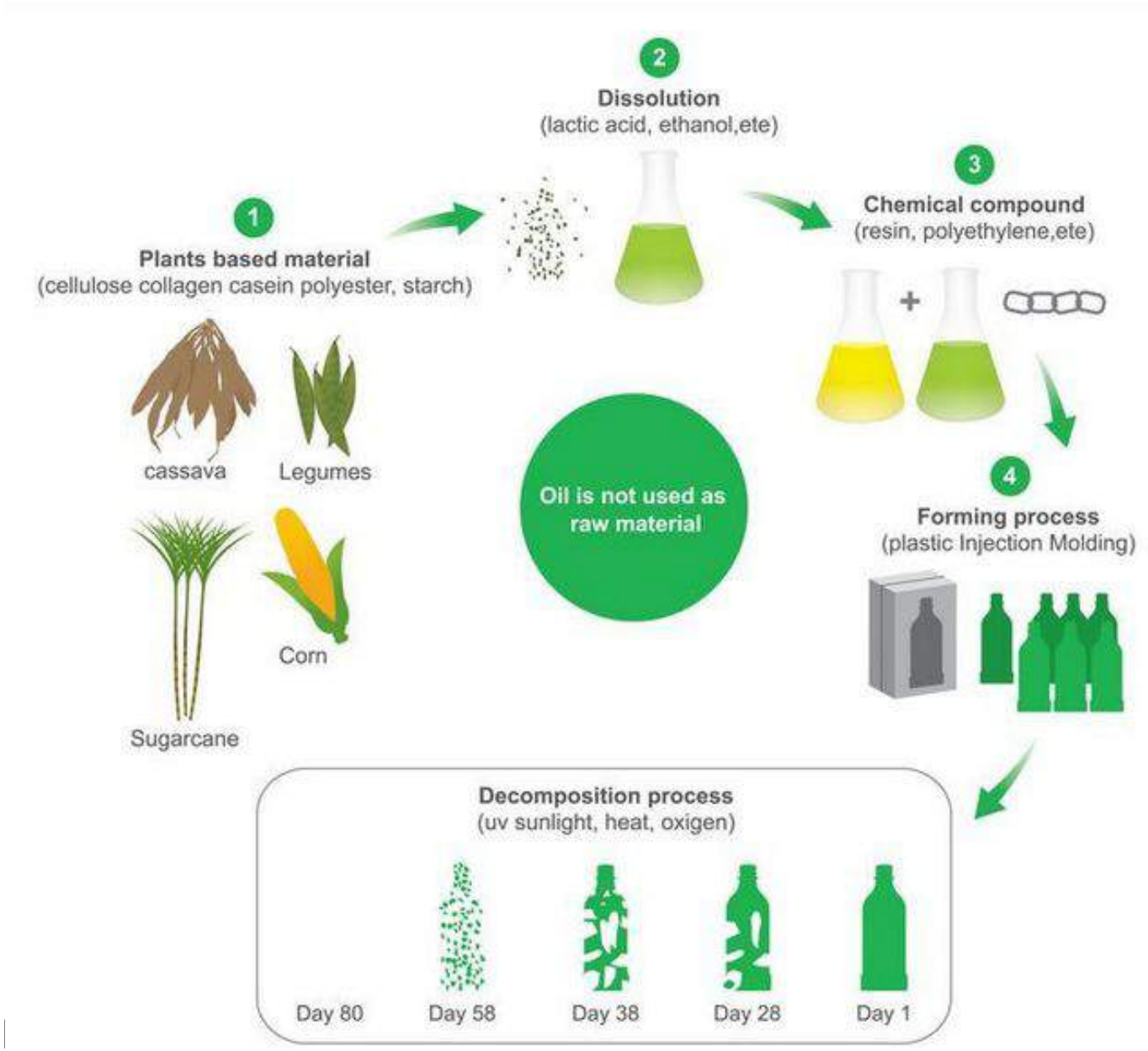
This Caterpillar Can Eat Plastic

The find could lead to new techniques for breaking down our ever-growing plastic waste

https://www.smithsonianmag.com/smart-news/researchers-find-wax worms-can-digest-plastic-180963028/



Science of The Total Environment, Volume 704, 20 February 2020, 135931



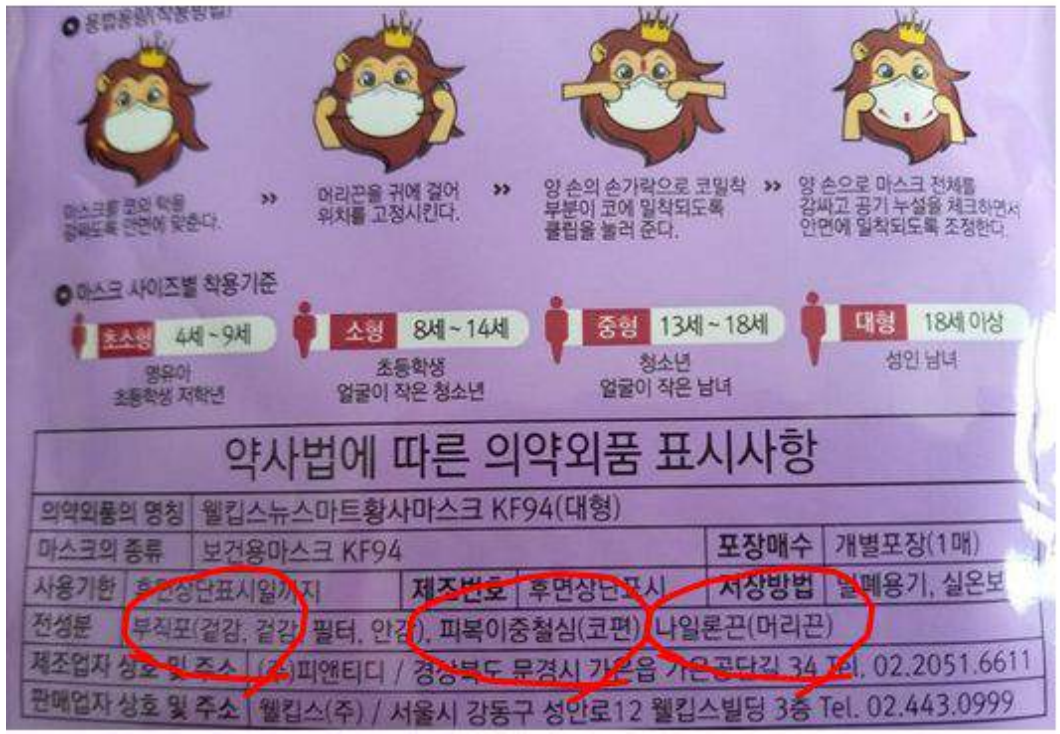
https://ecofriend.com/bio-plastics-good-bad-ugly.html

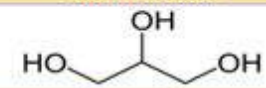
Greta Thunberg (3. Januar 2003 in Stockholm)

https://youtu.be/VFkQSGyeCWg

숙제: 내 주변 물건의 물질 성분 알아보기!

(Googling, 위키백과, 화학백과…)



Strukturformel	
	
Allgemeines	
Name	Glycerin
Andere Namen	• Glycerol • Propan-1,2,3-triol (IUPAC) • 1,2,3-Propantriol • Propantriol • Glycerinum • E 422[1] • Ölsüß • GLYCERIN (INCI)[2]
Summenformel	$C_3H_8O_3$
Kurzbeschreibung	farblose, süß schmeckende, leicht viskose Flüssigkeit[3]
Externe Identifikatoren/Datenbanken	
CAS-Nummer	56-81-5 [+]
Arzneistoffangaben	
ATC-Code	• A06AG04 • A06AX01
Eigenschaften	
Molare Masse	92,09 g·mol^{-1}[4]
Aggregatzustand	flüssig
Dichte	1,26 g·cm^{-3} (20 °C)[4]
Schmelzpunkt	18 °C[4]
Siedepunkt	290 °C (unter Zersetzung)[4]
Dampfdruck	• 0,00121 hPa (40 °C)[4] • 0,00337 hPa (50 °C)[4]
Löslichkeit	• mischbar mit Wasser und Ethanol[3] • gering in Diethylether[3] • unlöslich in Benzin, Benzol, Petrolether und Chloroform[3]