

成品中常見的危險化學物質

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Outline

- Classification of Dangerous Substances under REACH
- Examples of Articles contain Dangerous Substances
- How to Control of Dangerous Substances



Classification of Dangerous Substances under REACH

Dangerous Substances

- Substances of very high concern (SVHC) must be authorized under REACH and their use may be subject to restrictions. This applies to:
 - CMR substances
 - PBT substances
 - vPvB substances
 - Substances with particular properties

Substances of Very High Concern

- Cause cancer, or mutation or interfere with the body's reproductive function
 - Category 1 and 2 Carcinogens (C)
 - Category 1 and 2 Mutagens (M)
 - Category 1 and 2 Reproductive Toxicants (R)
 - Persistent, Bioaccumulative, Toxic (PBT)
 - Very Persistent, Very Bioaccumulative (vPvB)
 - Substances with Equivalent Concerns
 - e.g., Endocrine Disruptors

Carcinogen (C)

- Cancer causing substances
 - Carc. Cat. 1; R45 May cause cancer.
 - Carc. Cat. 1; R49 May cause cancer by inhalation.
 - Carc. Cat. 2; R45 May cause cancer.
 - Carc. Cat. 2; R49 May cause cancer by inhalation.

Mutagenic (M)

- Mutagenicity Genetic Toxicity
 - Muta. Cat. 1; R46 May cause heritable genetic damage.
 - Muta. Cat. 2; R46 May cause heritable genetic damage.

Toxic to Reproduction (R)

- Toxicity to Reproduction Fertility
 - Repr. Cat. 1; R60 May impair fertility.
 - Repr. Cat. 2; R60 May impair fertility.

Toxic to Reproduction (R)

- Toxicity to Reproduction Development
 - Repr. Cat. 1; R61 May cause harm to the unborn child.
 - Repr. Cat. 2; R61 May cause harm to the unborn child.

PBT substances

- Substances which are persistent, bioaccumulative and toxic according to Annex XIII
- Take a long time to break down, accumulate in the body and are toxic

vPvB substances

- Substances which are very persistent and very bioaccumulative according to Annex XIII
- Take a very long time to break down and accumulate in the body

PBT and vPvB

- Potential hazards to
 - Aquatic
 - Terrestrial compartment
 - Atmospheric compartment
 - Via food-chain accumulation
 - Microbial activity of sewage treatment systems

PBT and vPvB

- R50-53 substance: PBTS and vPvBs
 - Dangerous for the environment;
 - Very toxic to aquatic organisms,
 - may cause long-term adverse effects in the aquatic environment.

Dangerous Substances

- Substances with particular properties
 - which according to scientific knowledge have a likely latent effect upon humans and the environment, giving rise to the same concerns as the above-mentioned substance groups
 - e.g. endocrine disruptors

Endocrine disruptors

- An endocrine disrupter is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations.
- Have serious and irreversible effects on humans and the environment, for example substances that disturb the body's hormone system

Endocrine disruptors

- Man-made chemicals which are potential endocrine disruptors
 - Pesticides (DDT, Chlorinated compounds)
 - Plastic additives (Phthalates)
 - Industrial chemicals (Polychlorinated Bisphenol, Dioxins)



Examples of Articles contain Dangerous Substances

Examples of Articles contain Dangerous Substances

- Stationery
- Toy
- Textile
- Cosmetics
- Health Care Product
- Jewelry / Watches
- Baby Product
- Furniture
- Household Product

Stationery

- Product
 - Carbonless copy paper
- Chemical Substance
 - Formaldehyde
- Toxic Effects
 - Irritant, carcinogen and mutagen

Stationery

- Product
 - White School Glue
- Chemical Substance
 - Vinyl acetate (Monomer of polyvinyl acetate)
- Toxic Effects
 - A suspect carcinogen, irritant and mutagen

Stationery

- Product
 - Correction Pen
- Chemical Substances
 - Toluene, 1,1,1-trichloroethane, trichloroethylene
- Toxic Effects
 - Carcinogen, irritant

Stationery

- Product
 - White Board Marker
- Chemical Substances
 - Methyl Isobutyl Ketone (MIBK), Xylene
- Toxic Effects
 - Neurotoxicant, kidney damage

Toy

- Product
 - Magnet, Crayon
- Chemical Substance
 - Lead in paint
- Toxic Effects
 - Carcinogen, bioaccumulation and Persistent

Toy

- Product
 - Bindeez
- Chemical Substance
 - 1,4-Butandiol
- Toxic Effects
 - Metabolize to hydroxybutyric acid which is a neuroprotective therapeutic drug

Baby Product

- Product
 - Feeding bottle
- Chemical Substance
 - Bisphenol A
- Toxic Effects
 - Disrupt the endocrine and reproductive systems

Cosmetics

- Product
 - Finger nails polish
- Chemical Substance
 - Dibutyl phthalate
- Toxic Effects
 - Toxicity to reproduction fertility and reproduction development

Cosmetics

- Product
 - Sunscreen
- Chemical Substance
 - Oxybenzone
- Toxic Effects
 - Allergies, hormone disruption, and cell damage

Cosmetics

- Product
 - Lipstick
- Chemical Substance
 - Lead
- Toxic Effects
 - Carcinogen, bioaccumulation and Persistent

Textiles

- Product
 - Garment
- Chemical Substances
 - Allergenic Disperse Dyes
- Toxic Effects
 - Toxicity to reproduction fertility and reproduction development

Textiles

- Product
 - Garment
- Chemical Substance
 - Perfluorooctane sulfonate (PFOS)
- Toxic Effects
 - Cause birth defects, adversely affect the immune system, disrupt thyroid function, reproductive problem, bioaccumulation, persistent to the environment

Jewelry / Watches

- Product:
 - Ear-ring
- Substances
 - Nickel, Lead & Chromium (VI)
- Toxic Effects
 - Sensitizer, Carcinogen, bioaccumulation and Persistent

Furniture

- Product:
 - Wooden Furniture such as beds, cabinets, etc.
- Substances
 - Formaldehyde
- Toxic Effects
 - Irritant, carcinogen and mutagen

Consumer Product

- Product
 - Environmental Friendly Lunch Box (made by straw pulp)
- Substances
 - Lead and Chromium
- Toxic Effects
 - Irritant, carcinogen and mutagen

Household Product

- Product
 - PVC plastic casing
- Chemical Substances
 - Di(2-ethylhexyl) phthalate (DEHP) & Butyl Benzyl Phthalate (BBP)
- Toxic Effects
 - Carcinogen, Birth deformities, reproductive disorders, liver, kidney and thyroid impacts

Household Product

- Product
 - Toothpaste
- Chemical Substance
 - Diethylene glycol
- Toxic Effects
 - Kidney impairment

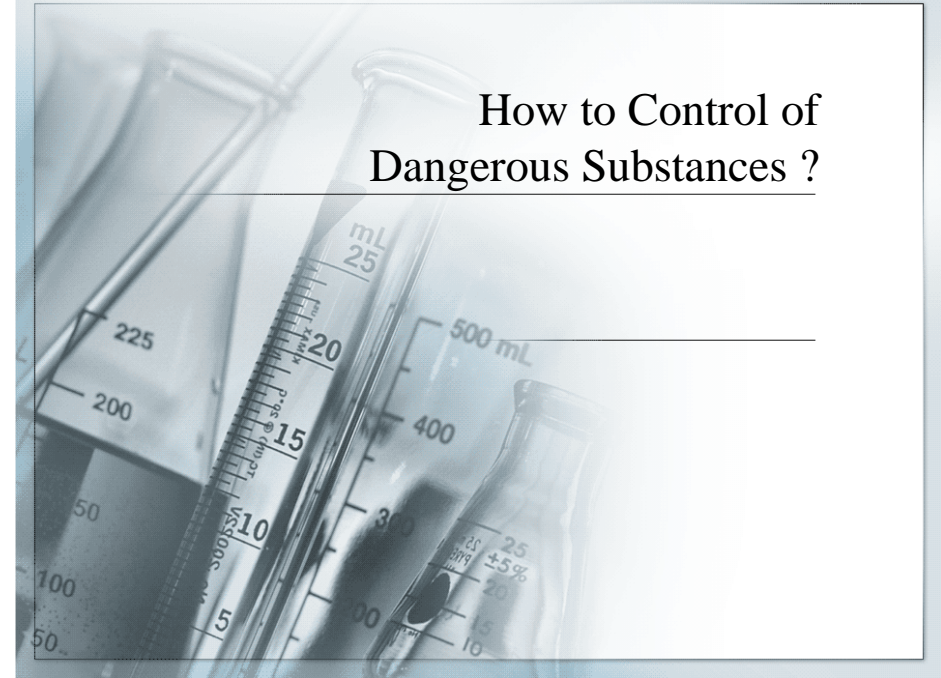
Household Product

- Product
 - Candle
- Substances
 - lead and zinc from candles with metal-core wicks
- Toxic Effects
 - Irritant, carcinogen and mutagen

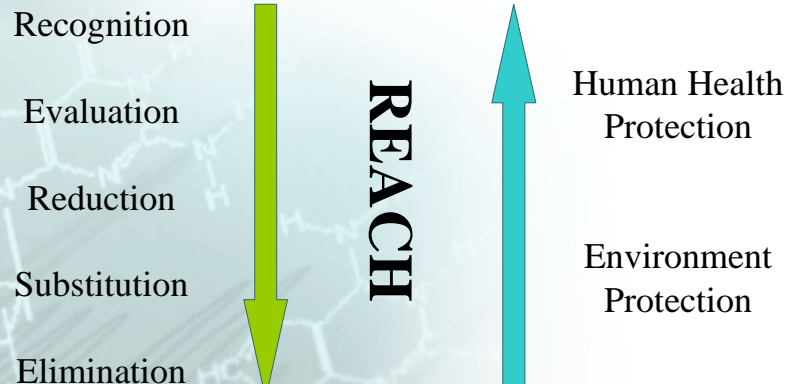
Household Product

- Product
 - Hair Lotion
- Chemical Substance
 - Lead acetate
- Toxic Effects
 - Local irritation, redness and pain, Hemolytic anemia, nervous disorders, kidney impairment

How to Control of Dangerous Substances ?



How to Control of Dangerous Substances



Candidate List

- Candidate list (“black list”) of SVHC
 - Estimated about 1500 substances
- First Candidate List of Substances of Very High Concern (SVHC) was published on 30 June 2008

First Candidate List of Substances of Very High Concern (SVHC)

Substance identification			Authority	Reason for proposing
Substance name	CAS number	EC number		
Anthracene	120-12-7	204-371-1	Germany	PBT
4,4'- Diaminodiphenylmethane	101-77-9	202-974-4	Germany	CMR
Dibutyl phthalate	84-74-2	201-557-4	Austria	CMR
Cyclododecane	294-62-2	206-33-9	France	PBT
Cobalt dichloride	7646-79-9	231-589-4	France	CMR
Diarsenic pentaoxide	1303-28-2	215-116-9	France	CMR
Diarsenic trioxide	1327-53-3	215-481-4	France	CMR
Sodium dichromate, dehydrate	7789-12-0		France	CMR
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	Netherlands	vPvB
Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	204-211-0	Sweden	CMR
Hexabromocyclododecane (HBCDD)	25637-99-4	247-148-4	Sweden	PBT
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	United Kingdom	PBT
Bis(tributyltin)oxide	56-35-9	200-268-0	Norway	PBT
Lead hydrogen arsenate	7784-40-9	232-064-2	Norway	CMR
Triethyl arsenate	15606-95-8	427-700-2	Norway	CMR
Benzyl butyl phthalate	85-68-7	201-622-7	Austria	CMR

http://echa.europa.eu/consultations/authorisation/svhc/svhc_cons_en.asp

Thank You