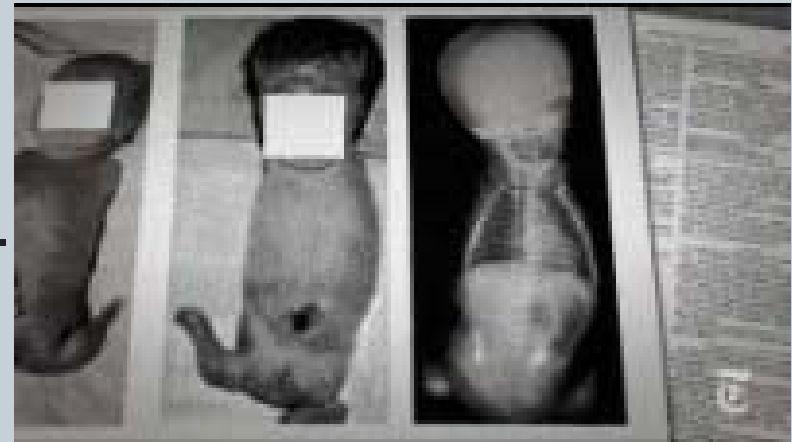


Chemicals and Contaminants in Daily Life



Teratology (毒理學-致畸胎學)

- Thalidomide, first launched in 1957 by a West German company, Grunenthal, was marketed as a sedative to a sleepless post-World War Europe. Someone accidentally discovered that the drug also cures nausea. Soon the medicine began to be prescribed to pregnant women all over the world for morning sickness

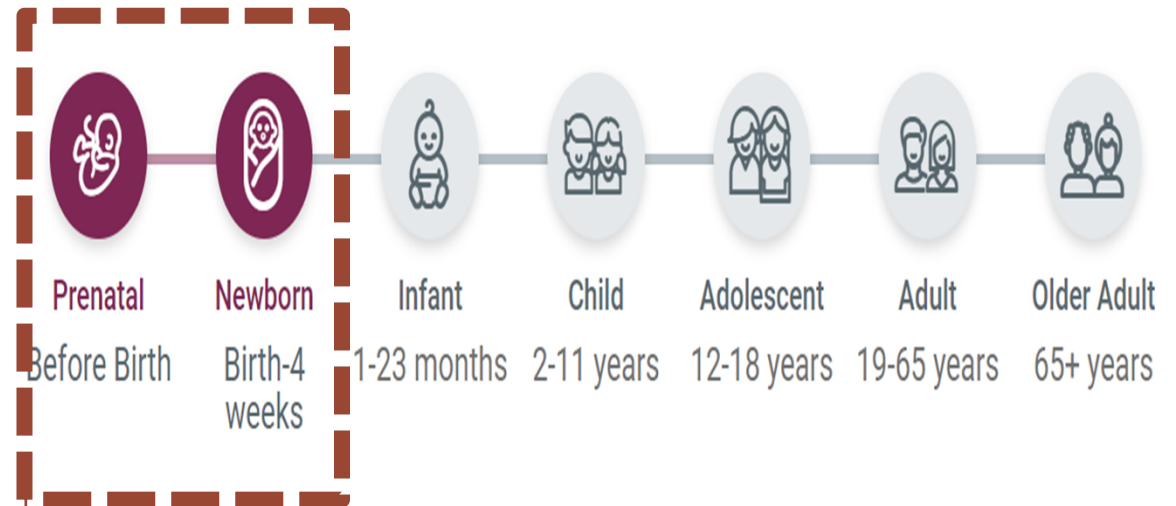


Thalidomide embryopathy is a group of anomalies presented in infants as a result of *in utero* exposure (between 20-36 days after fertilization) to thalidomide, **a sedative used in treatment of a range of conditions, including morning sickness, leprosy and multiple myeloma.**

Thalidomide Syndrome

When do symptoms of this disease begin?

The most common ages for symptoms of a disease to begin is called age of onset. Age of onset can vary for different diseases and may be used by a doctor to determine the diagnosis. For some diseases, symptoms may begin in a single age range or several age ranges. For other diseases, symptoms may begin any time during a person's life.



The common ages for symptoms to begin in this disease are shown above by the colored icon(s).

This information comes from Orphanet [🔗](#)

Father of toxicology : Paracelsus (1493-1541)

- Nearly 500 years ago, Swiss physician and chemist Paracelsus expressed the basic principle of toxicology: “All things are poison and nothing is without poison; only the dose makes a thing not a poison.” This is often condensed to:

**“The dose makes
the poison.”**



急毒性

Single Dose Toxicity Studies Acute toxicity (LD_{50})

- LD_{50} is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
- The LD_{50} is one way to measure the **short-term poisoning potential (acute toxicity)** of a material. Toxicologists can use many kinds of animals but most often testing is done with rats and mice.

LD₅₀

半數致死劑量

LD ₅₀	Classification
<5 mg/kg	Extremely toxic
5-50 mg/kg	Highly toxic
50-500 mg/kg	Moderately toxic
500-5,000 mg/kg	Slightly toxic
5000-15,000 mg/kg	Practically non-toxic
>15,000 mg/kg	Relatively harmless

Loomis & Hayes, 1996

LD₅₀ (mg/kg)

Example

超級毒

< 5

戴奧辛(TCDD)

劇毒

5-50

苦味毒(picotoxin)

強毒

50-500

苯巴比妥(phenobarbital)

低毒

500-5000

硫酸嗎啡(morphine sulfate)

化學品安全技術說明書 MSDS

化學品安全技術說明書（英語：**Material Safety Data Sheet**，縮寫：**MSDS**）是一個包含了某種物質相關數據的文檔。

MSDS (Material Safety Data Sheet) is now called an SDS (Safety Data Sheet). The purpose of both MSDS and SDS documents remains unchanged and is to list the information pertaining to the occupational health and safety for the various uses of the substances and products.



HEALTH HAZARD

Carcinogen
Mutagenicity
Reproductive Toxicity
Respiratory Sensitizer
Target Organ Toxicity
Aspiration Toxicity



SKULL & CROSSBONES

Acute Toxicity:
Fatal or toxic



EXCLAMATION MARK

Irritant (skin & eye)
Skin Sensitizer
Acute Toxicity (harmful)
Respiratory Tract Irritant
Hazardous Ozone Layer
Narcotic Effects



FLAME

Flammables
Pyrophorics
Self-Heating
Emits Flammable Gas
Self-Reactives
Organic Peroxides



FLAME OVER CIRCLE

Oxidizers



CORROSION

Skin Corrosion/Burns
Eye Damage
Corrosive to Metals



GAS CYLINDER

Gases Under Pressure



EXPLODING BOMB

**Explosives
Self Reactives
Organic Peroxides**



ENVIRONMENT

Aquatic Toxicity

化學品安全技術說明書 MSDS / SDS

1. Formaldehyde in furniture and nail polish
2. p-Phenylenediamine in hair dye. ◦
3. calcium propionate in the bread.
4. Diethanolamine in shampoo or conditioning
5. Propanediol in wet wipes ◦
6. talcum powder in cosmetic
7. Toluene in perfume ◦
8. Acrylamide in Chips.



<https://www.science.org.au/curious/people-medicine/chemistry-cosmetics>

外籍移工之死-缺乏教育訓練的代價

化骨水不慎噴濺 移工肢體腐蝕慘死！（公共電視-有話好說）



鼎元光電移工 氫氟酸致死案

● 8/28 9:52 菲律賓籍移工清洗電路板，遭氫氟酸溶液噴濺到大腿後方造成大面積腐蝕，送醫後於21:08時宣告不治

鼎元光電：

- ▶ 女移工在廠內服務3年，當日穿著防護衣依程序用氫氟酸清洗電路板轉身時氫氟酸傾倒遭噴濺，造成沒有防護衣隔離的腿部後方灼傷
- ▶ 廠內員工立刻以葡萄糖酸鈣凝膠塗抹傷口中和，並送醫急救
- ▶ 人員作業都會穿防護衣，防護位置只在正面，未來會再加強防護

死者同事轉述：現場一片慌亂，許多藥品瓶罐都沒有完整標示

希望職工中心專員 許惟棟：

葡萄糖酸鈣乳膏只對手指大小的噴濺範圍有用
大面積潑灑必須使用六氟靈大量沖洗

台灣國際勞工協會研究員 陳秀蓮：

- ▶ 仲介警告死者家屬不可以找台灣NGO
家屬來台要看遺體，也遭恐嚇若有NGO團體陪同會被告
- ▶ 鼎元光電事發後20天仍完全沒有提出和解方案

資料來源：中央社

— GOOGLE —



Pyridine MSDS 中文



Google 搜尋

好手氣

化學品安全技術說明書 MSDS

1. 指甲油中的甲醛
2. 染髮劑中的對苯二胺。
3. 丙酸鈣 (E282) 的麵包防腐劑
4. 洗護產品中的二乙醇胺 (DEA)
5. 濕巾中的丙二醇。
6. 彩妝中的滑石粉。
7. 香水中的甲苯。
8. 漱口水中的酒精。
9. 消毒使用稀釋的漂白水
10. 消毒使用次氯酸水
11. 「卡迪那全天然洋芋片天婦羅口味」被檢出超標丙烯醯胺含量。

Pre-class reading

PCBs in Everyday Items/EPA Tribal Toxics

https://tribaltoxics.org/?page_id=300655

The Toxic Twelve Chemicals and Contaminants in Cosmetics/EWG

<https://www.ewg.org/the-toxic-twelve-chemicals-and-contaminants-in-cosmetics>

September

October

Five things you should know about disposable masks and plastic pollution/UN news

<https://news.un.org/en/story/2020/07/1069151>

Global plastic Outlook/ OECD

<https://www.oecd.org/environment/plastics/>

https://www.youtube.com/watch?v=G8MO_8Zfu3Q



S10712015 教二甲 李昂儒

濕巾中的丙二醇

化學品危害分類



急性吞食毒性

LD50 大鼠: 15,670 mg/kg

急性吸入毒性 此信息不提供。

急性皮膚毒性

LD50 兔子: > 20,000 mg/kg

化學品危害分類 本化學物質根據化學物質分類及標記全球協調制度 (GHS)不另分類。

- 標示內容
- GHS標籤元素 未分類/或未規制
- 危害象徵符號 未分類/或未規制
- 警示語 未分類/或未規制
- 危害警告訊息 未分類/或未規制

個人防護設備

呼吸防護：手部防護：

眼睛與臉部防護：皮膚及身體防護：

在正常情形使用下,不需特殊呼吸防護裝備.通常不會危害皮膚。
使用時請戴上適當的抗化學物質手套。穿戴化學防護手套例如:

丁睛橡膠乳膠

如可能因噴濺或噴灑液體造成眼部接觸，請使用防噴濺護目鏡。

在一般條件依正常用途使用，不需穿戴特殊衣物/皮膚保護裝

Ethanol 酒精MSDS

LD₅₀ (mg/kg)

超級毒	< 5
劇毒	5-50
強毒	50-500
低毒	500-5000

The RCA Factory in Taiwan

IN 1969, the Radio Corporation of America (RCA), an international company from the developed world, chose Taiwan, **a developing country which had lower wages but high quality labor, not to mention loose labor and environment regulations,** to establish its new factory. RCA, an American company manufacturing television components, motherboards, and other electronic products, was welcomed by Taiwanese at that time, because of its international scale, advanced technology, well-known reputation, and the large number of employment opportunities it offered.

Sadly, the famous company did not tell its employees that, during the process of manufacturing, large amount of dangerous chemical pollutants was used and later discharged into the air, water and ground of the RCA factory. The pollution has caused its employees to be exposed to severely toxic substances that seriously harmed their health. At least 62 employees died and 108 of them got cancer or other serious illnesses. Some female employees had miscarriages due to the pollution.



