

Reprotoxic chemical agents

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Introduction

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Identification

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Route

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Replacement

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Preventive measures

In general, **chemical agents that are reproductive toxicants can only be marketed if authorised.**

1

Objective:

To identify chemical agents that are reproductive toxicants, learn the routes into the body, and find out how to protect yourself when handling them.

2

Area of application: laboratories and workshops in which chemical agents that are reproductive toxicants are handled.

3

What is a chemical agent that is toxic to reproduction?

It is a substance or mixture of substances that **causes birth defects.**

4

Classifications:**Category 1A**

Substances that **are known** to be reproductive toxicants for humans, based on the existence of **human evidence.**

Category 1B

Substances that **are known** to be reproductive toxicants for humans, based on the existence of **animal evidence.**

Category 2

Substances that **are suspected** of being toxic to human reproduction.

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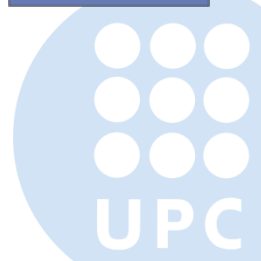
To identify chemical agents that are reproductive toxicants, **consult the label and/or the safety data sheet (SDS)**

Consult point 2 on the identification of hazards in the corresponding safety data sheet (SDS), which provides the information required to identify a chemical agent that is a reproductive toxicant.

Category	Pictogram	Signal word	Indications of hazards	H-phrase	R*-phrase
1A or 1B		Danger	May damage fertility or the fetus May damage fertility May damage the fetus May damage fertility. May damage the fetus May damage fertility. Suspected of damaging the fetus May damage the fetus. Suspected of damaging fertility	H360 H360F H360D H360FD H360Fd H360Df	R60 R61 R60/61 R60/63 R61/62
2		Warning	Suspected of damaging fertility or the fetus Suspected of damaging fertility Suspected of damaging the fetus Suspected of damaging fertility. Suspected of damaging the fetus	H361 H361f H361d H361fd	R62 R63 R62/63
Additional category for effects on or via lactation	No pictogram	No signal word	May cause harm to breast-fed children	H362	R64



* Specific risks attributed to dangerous substances and preparations, according to RD363/1995 and RD255/2003



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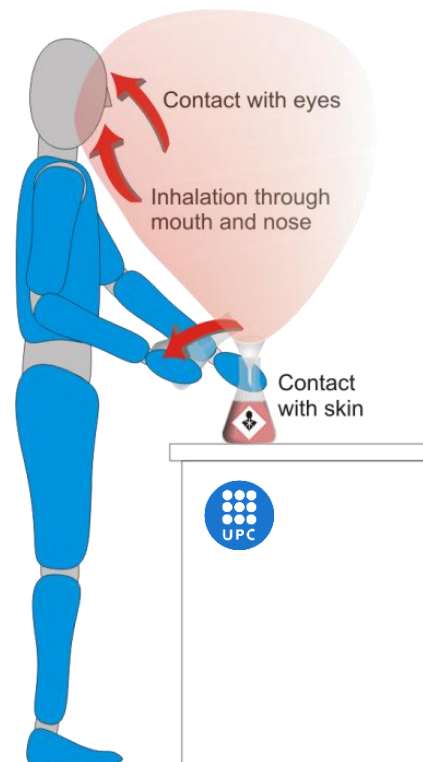
Routes are the ways that chemical agents enter the organism. The main route is respiratory.

RESPIRATORY ROUTE

The route into the body for any chemical agent that is in the air in the form of a gas, vapour, fumes, powder, fibre, etc. that is taken into the lungs when the individual breathes in – **inhales the surrounding air through the nose or mouth**. Depending on the volume and shape of the particles, they will reach different distances along their passage through the respiratory system.

DIGESTIVE ROUTE

The route for chemical agents that involves their **ingestion**, generally due to an involuntary **action** that is almost always associated with unhygienic practices and habits.



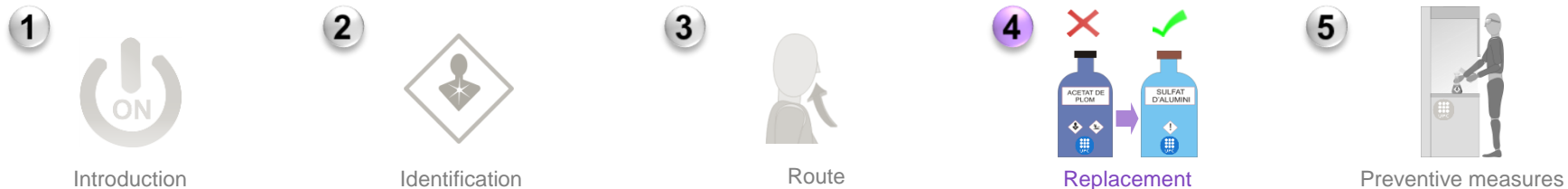
DERMAL ROUTE

The route for chemical agents that, when they come into **contact with the skin**, can cross it and reach the blood. The blood then distributes the chemicals around the body. Contact with eyes (irritation, etc.) is part of this route.

PARENTERAL ROUTE

The route for chemical agents **through injuries to the skin** or direct inoculation with the toxin.

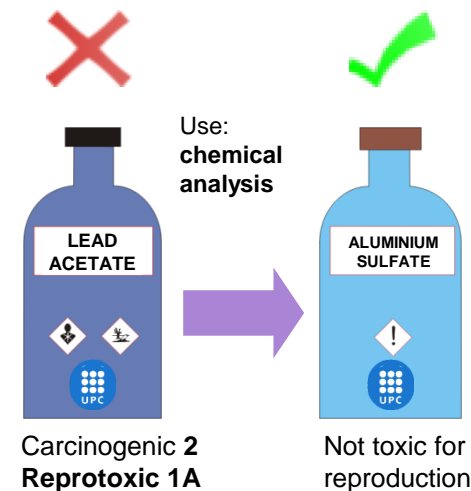
Reprotoxic chemical agents



If the chemical agent that is a reproductive toxicant is replaced by another agent, the risk of exposure is eliminated.

Generally, chemical agents that are **reproductive toxicants do not have a universal replacement**, but can be substituted in certain applications by other chemical agents that are not toxic to reproduction, or by alternative processes.

Example Chemical agent that is a REPRODUCTIVE TOXICANT	Category	Applications	Alternative/Replacement
Lead acetate	Carc. 2 Repr. 1A	Chemical analysis	Aluminium sulfate
Formamide	Repr. 1B	Chemical analysis	Cyclopentanone
Ethylene glycol acetate	Repr. 1B	Chemical analysis	Propylene glycol ethers



For more information on potential substitutes, consult the **INFOCARQUIM (INFORMació sobre CARcinògens QUÍMics)** database on the **INSHT website**: <http://infocarquim.insht.es:86/Forms/About.aspx>

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Preventive measures (1/2)

If the reprotoxic chemical cannot be replaced, observe the following preventive measures.

- ✓ Before handling the reprotoxic chemical:
 - Check the **relevant information** (hazards, precautions, etc.) on the **safety data sheet (SDS) for the chemical**.
 - Read and follow the health and safety measures on the SDS for the chemical.
- ✓ **Work with sealed equipment** to prevent exposure to reprotoxic chemicals due to accidental emissions at critical parts of the system (valves, joints, etc.).
- ✓ **Limit the amounts and concentrations** of the reprotoxic chemical to reduce exposure.
- ✓ **Limit the number of workers** who handle reprotoxic chemicals and reduce exposure time.
- ✓ **Delimit and signpost work areas** where reprotoxic chemicals are handled.

Danger! Reprotoxic chemicals in the work area



Chemical handled: lead acetate

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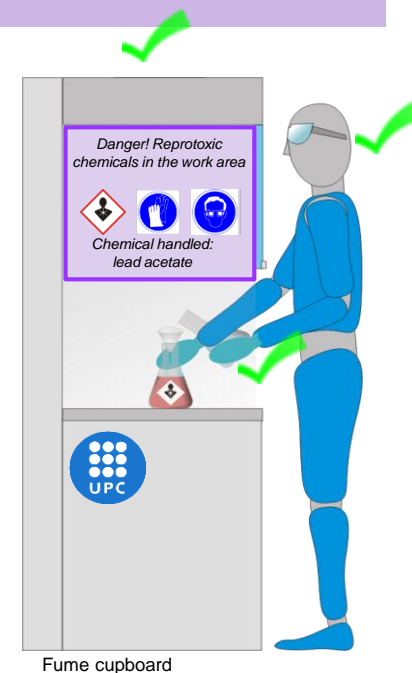
Preventive measures (2/2)

If the reprotoxic chemical cannot be replaced, observe the following preventive measures.

- ✓ **Handle** reprotoxic chemicals in the **fume cupboard** to prevent the inhalation of vapours and aerosols.
- ✓ **Use the following (minimum) personal protective equipment:**
 - **nitrile and/or neoprene chemical protection gloves** to protect the skin,
 - **safety goggles** to protect the eyes.

Consult the safety data sheet for the chemical to ensure the right PPE is used. If you have any queries, contact the manufacturer.
- ✓ **Wear appropriate clothes** (lab coat or similar) to prevent contaminating your street clothing. Do not wash work clothes at home. Use disposable lab coats or overalls as an alternative.
- ✓ **Store** reprotoxic chemicals in a chemical storage cabinet with **access limited** to authorised personnel.
- ✓ **Health surveillance** is **compulsory** for workers exposed to reprotoxic chemicals. Request a medical appointment by clicking on this link:

<https://www.upc.edu/prevencio/ca/salutupc>



Fume cupboard

US OBLIGATORI
DE GUANTS
DE PROTECCIÓUS OBLIGATORI
DE PROTECTORS
OCULARS

Compulsory personal protective equipment

For more information on chemicals, consult the chemicals section on the Occupational Health and Safety website:
<http://www.upc.edu/prevencio/ca/seguretat-higiene/productes-quimics>