



Principles and rules for safety and accident prevention in CERM's laboratories

Safety at CERM's biotech labs

- **D. Legs. 81/2008 and amendments**
 - Safety, prevention and protection.
 - Obligations for the employer and directors
 - Obligations for lab workers
 - Safety banners
- **Introduction to biotechnology laboratories at CERM:**
 - Description of the activities and major equipment installed in
 - Procedures
 - Risks associated with biotechnology-chemical laboratory
 - Good working practice in the biotechnology-chemical laboratory of CERM
- **CLP – Classification, Labelling and Packaging of substances and mixtures**
- **SDS safety data sheets**



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Centro Risonanze
Magnetiche

Why this course

D.Lgs 81/2008 and
amendaments **D.Lgs 109/2009**

Accordo Stato Regioni

**Agreement between Italian State and local administrations
dated December 21th 2011**



Organization of CERM-UniFi

Employer: General Director of UniFi.

Director of the Department/Center

Lab manager (scientific supervisor): he is aware of lab activity and sets up safety procedures

“Preposto” (in charge of...)

Workers



D.lgs 81/2008 and amendments D.lgs 109/2009

Obligations for employer and directors (from articles 17,18) :

- ❑ Evaluate the risk related to the activities and prepare the «DVR»
- ❑ Organize procedures to minimize all kind of risk
- ❑ Provide workers with safety equipment
- ❑ Organize sanitary surveillance
- ❑ Organize trainings and inform workers about risks connected to their work

Obligations for “preposto” (from article 19)

- ❑ Supervises the compliance of the safety regulations and obligations
- ❑ Informs the director of the Dept. or the employer of every problems in the activity related to the safety
- ❑ Informs managers if workers do not observe safety regulations



DVR

Documento valutazione del rischio (IT)

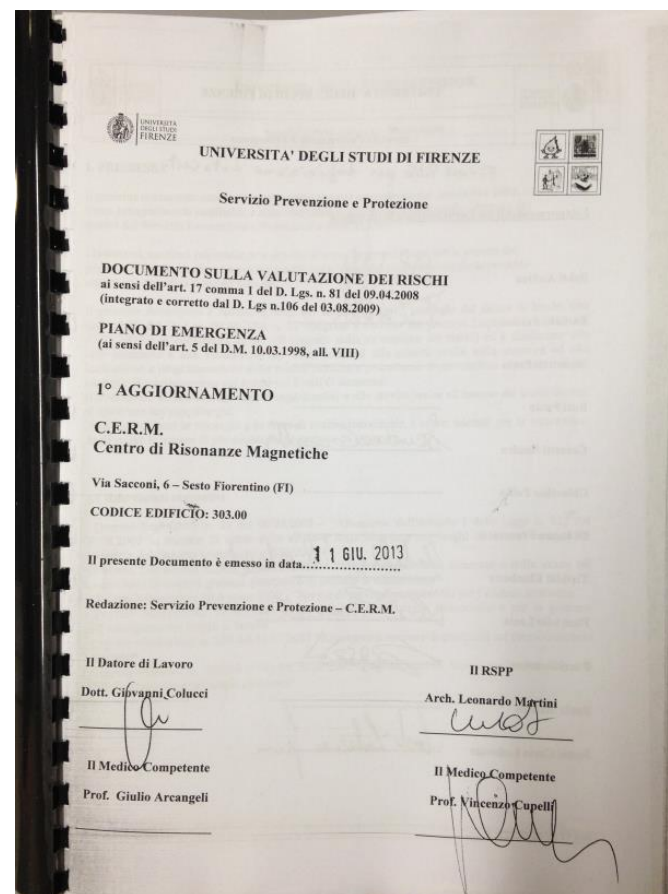
Risk evaluation document (EN)

DVR contains the assessment of risks connected to the activity of CERM and the work practices for working safely

Contains emergency instructions

Where does DVR document is?

- Secretariat of CERM
- on bulletin board (room 45)



Libretto Sicurezza Health & safety manual

Università degli Studi di Firenze

Centro di Risonanze Magnetiche - CERM

Via Luigi Sacconi 6 – Sesto Fiorentino

Health and safety manual

Standards of practice for the safety and risk prevention in the
workplace of CERM

Updated on January 2015



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Health and safety manual

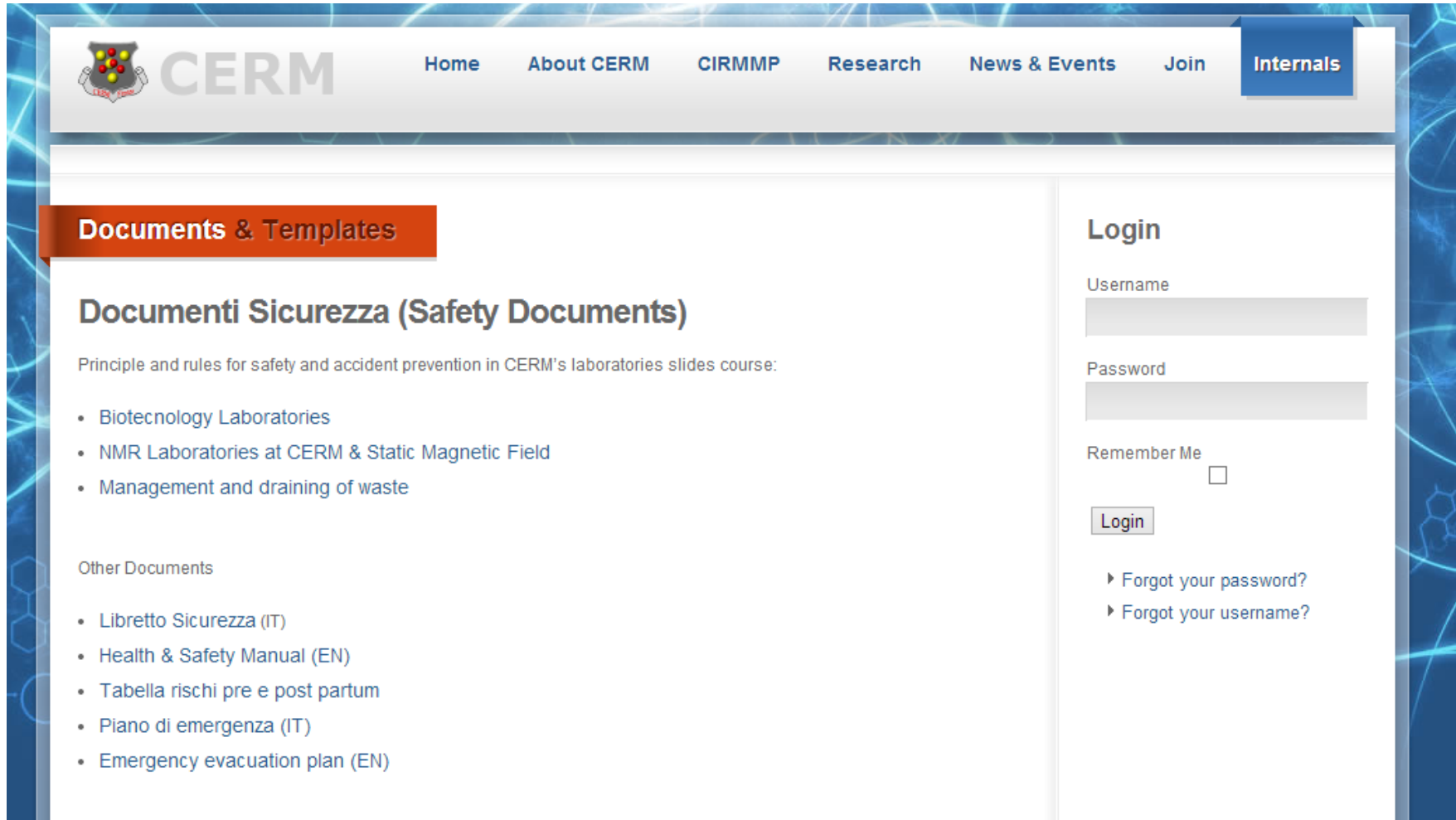
Standards of practice for the safety and risk prevention in the
workplace of CERM

Updated on January 2015

**This document has
been read and
signed by all of you!**

Where can I find docs about safety?

www.cerm.unifi.it -> home -> Internals -> Documents & Templates



The screenshot shows the CERM website's 'Documents & Templates' page. The navigation bar at the top includes 'Home', 'About CERM', 'CIRMMMP', 'Research', 'News & Events', 'Join', and 'Internals'. The main content area is titled 'Documenti Sicurezza (Safety Documents)' and contains a list of safety documents and a login form.

Documents & Templates

Documenti Sicurezza (Safety Documents)

Principle and rules for safety and accident prevention in CERM's laboratories slides course:

- Biotechnology Laboratories
- NMR Laboratories at CERM & Static Magnetic Field
- Management and draining of waste

Other Documents

- Libretto Sicurezza (IT)
- Health & Safety Manual (EN)
- Tabella rischi pre e post partum
- Piano di emergenza (IT)
- Emergency evacuation plan (EN)

Login

Username

Password

Remember Me

- ▶ Forgot your password?
- ▶ Forgot your username?



D.lgs 81/2008 and amendments D.lgs 109/2009

Obligation for workers (from article 20)

- Take care of their own safety and your colleagues. Do not make risky actions
- Observe safety instructions from «preposti» and directors
- Observe procedures
- Correctly use reagents, instruments and machines
- Correctly use safety equipment
- Report to directors, lab manager, preposto every problem: miss working machines, inadequate procedures....
- Don't alter machines
- Participate the health program

D.lgs 81/2008 and amendments D.lgs 109/2009

In case of pregnancy



- The pregnant must inform the director of CERM as soon as she discovers the pregnancy

SETTORE DI ATTIVITA'	RISCHIO AGENTI CHIMICI	RISCHIO AGENTI BIOLOGICI	RISCHIO MOGM	RISCHIO CAMPI ELETTRROMAGNETICI	RISCHIO VIDEOTERMINALE
LABORATORIO BIOLOGICO	Non presente	incompatibile	incompatibile	Non presente	Non presente
LABORATORIO BIOTECNOLOGICO	incompatibile	incompatibile	incompatibile	Non presente	Non presente
LABORATORIO RISONANZE MAGNETICHE	Non presente	Non presente	Non presente	incompatibile	incompatibile
LABORATORIO CHIMICO	incompatibile	Non presente	Non presente	Non presente	Non presente
AMMINISTRATIVA / UFFICIO	Non presente	Non presente	Non presente	Non presente	Compatibile come dal documento di valutazione dei rischi

L'incompatibilità preventivamente dichiarata in tabella, sia pre partum che post partum, assume carattere di validità al momento della comunicazione dello stato di gravidanza al Direttore di Dipartimento-Centro/Dirigente.

Il responsabile della struttura, a titolo cautelativo, si attiva immediatamente togliendo la lavoratrice dai locali frequentati, e spostandola in luoghi che il Documento di Valutazione dei Rischi ha evidenziato privi di rischi specifici. Il responsabile informa di tutto il Servizio Prevenzione e Protezione di Ateneo.

Il Servizio Prevenzione e Protezione, in collaborazione con il Medico Competente, quando necessario, si attiva per verificare, attraverso valutazioni più puntuali dell'attività svolta, l'effettiva incompatibilità dichiarata, confermando l'allontanamento del lavoratore e/o limitandolo con apposite prescrizioni.

In case of Emergency

Emergency plan

contains procedures for managing the Emergency.

Safe evacuation of the building



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Safety Banners



Banners

Shape, background color and drawings

Prohibition banner

Segnali di divieto



Prescription banner

Segnali di prescrizione



Warning banner

Segnali di avvertimento



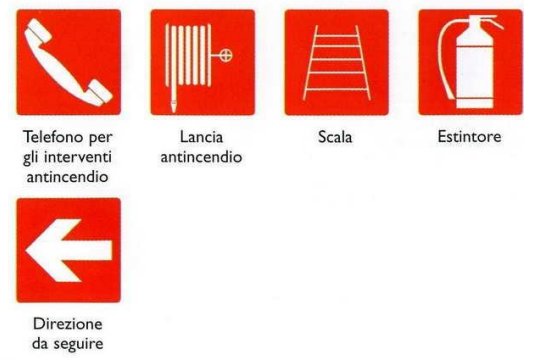
Rescue banner

Segnali di salvataggio e di soccorso



Fire related banner

Segnali per la lotta contro l'incendio



Prohibition banners

Red circle with strip, white background, black drawing

Segnali di divieto



Vietato fumare



Vietato fumare
o usare
fiamme libere



Acqua non
potabile



Vietato ai
carrelli di
movimentazione



Vietato
ai pedoni



Divieto di
spegnere
con acqua



Non toccare



Divieto di
accesso alle
persone non
autorizzate

Prescription banners

Round shape, light blue background, white drawing



Protezione
obbligatoria
degli occhi



Casco di
protezione
obbligatoria



Protezione
obbligatoria
dell'udito



Protezione
obbligatoria delle
vie respiratorie



Calzature
di sicurezza
obbligatorie



Guanti
di protezione
obbligatoria



Protezione
obbligatoria
del corpo



Protezione
obbligatoria
del viso



Protezione
individuale
obbligatoria
contro le cadute



Obbligo generico
(con eventuale
cartello
supplementare)



Passaggio
obbligatorio
per i pedoni



Warning Banners

Triangular shape, yellow background, black drawing



Materiale
infiammabile



Materiale
esplosivo



Sostanze
velenose



Sostanze
corrosive



Campo
magnetico
intenso



Pericolo di
inciampo



Carichi sospesi



Carrelli di
movimentazione



Tensione
elettrica
pericolosa



Pericolo
generico



Bassa
temperatura



Sostanze nocive
o irritanti



Materiali
radioattivi



Raggi laser



Materiale
comburente



Radiazioni non
ionizzanti



Caduta con
dislivello



Rischio
biologico

Rescue & Escape Banners

Square shape, green background, white drawing



Pronto
soccorso



Direzione
da seguire



Doccia di
sicurezza



Telefono per
salvataggio e
pronto soccorso



Barella



Lavaggio
degli occhi



Percorso
Uscite di emergenza

Fire Related Banners

Square shape, red background, white drawing



Telefono per
gli interventi
antincendio



Lancia
antincendio



Scala



Estintore



Direzione
da seguire



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Safety at the biotechnology laboratories at CERM



DPI. Always...

with no exceptions

- **Eye-shield (protection goggles):** eyes must be protected with eyes-shields having lateral protection. **The use of contact lens is forbidden:** they can only be used if absolutely necessary, and safety glasses must be worn
- **Gloves:** always wear gloves in the lab. It is strictly forbidden to wear gloves outside the lab. PC keyboards, handles, or any other object should be considered as contaminated in Lab . The same object must be uncontaminated outside the lab.
- **UV protective goggles and facial mask:** when skin is exposed to UV radiation. E.g. cutting DNA gel slice.
- **Coat** (white): always in the lab. Coat must be in cotton.
- **Mask:** wear mask when flying powder compounds are used



DPI. Always...

with no exceptions

capo IV Sez. I artt. 55-60 D. Lgs. 81/08

The worker which:

- do not follow the safety instructions and regulations received from the employer
- do not correctly use instruments, substances, safety devices
- rejects the use of DPI
- removes or alter safety devices, banners etc..
- rejects attending safety and training
- rejects the health programs

Can be:

- **placed under arrest up to 1 month (or fined from 200 € to 600 €)**
- **fined from 50 € to 300 €**

Principles of Lab/Biolab safety

- Unauthorized people cannot enter the lab
- **Never work alone in the lab**
- Do not enter the lab without DPI
- Walk....don't run!!!
- Tie up long hair.
- Wear appropriate and protective shoes: no sandals or other similar shoes are allowed
- Do not eat, drink, smoke or handle food or drinks in working areas
- Do not keep scissors, glass tubes, or other sharp object in your pockets
- Do not place bottles or other equipment near to the workbench's edge
- Contact lenses are forbidden: they do not protect eyes from impacts and prevent washing of eyes in case of sprays

Principles of Lab/Biolab safety

- The lab must be kept clean and in order. Unnecessary materials must be removed
- Do not displace stuff, instruments, reagents...
- **Always write on the bottles: your name, the composition of the content (needed in case of medical aid) and date.**
- Lab benches should be decontaminated at the end of the working day and after any spill of culture or chemicals
- Avoid formation of aerosol during the work
- Have enough space on the working bench and around you
- Before using chemicals, read the (M)SDS – (material) safety data sheet – and follow the instructions written there

Biolab main activities

- Molecular biology: gene amplification (PCR, gene cloning, mutagenesis...)
- Protein expression in *E.coli*: bacterial cultures in flasks and bioreactors
- Protein purification: low-mid pressure chromatography
- Protein chemistry: binding/removal of metals to/from proteins, oxidation/reduction of disulfides, protein modification...
- Preparation of protein samples for NMR analysis

Biological hazard

- Our activities involve *E.coli* manipulation. This kind microorganism is classified as «group 1»: low probability of infection in humans and animals
- We have to strictly avoid MOGM and DNA dispersion in the environment. First level of biological containment
- Never be in contact with biological stuff
- All the places and containers where bacterial (in our case) entities are present must be marked as follow.





Risks connected to the major instruments

Instrument	Type of danger	Type of risk
Cold room	Low temperature	Cold shock
Autoclaves	High temp. + pressure	Burn + mechanical injury
Ultrafreezer -80°C	very low temp.	Burn
Uv transilluminator	UV radiations	Eyes injury + skin burn
Centrifuges	High kinetic energy	Mechanical injury
Ultra-centrifuges	Very high kinetic energy	Mechanical injury
FPLC /HPLC/Akta prime	High pressure + chemicals	Mechanical + chemical
Laminar flow hood	UV radiation	Eyes injury + skin burn

The use of the instruments listed above requires well defined procedures to reduce risk of accident.



Before using an instrument...

Read the operation manual being sure of the procedures to be executed

Check the machine to be in the optimal status before using it. If the instrument has a problem, immediately inform your supervisor.

DO NOT USE DAMAGED INSTRUMENTS.

DO NOT TRY TO FIX IT!

In case of doubts ask your supervisor for clarifications **BEFORE** doing anything



Procedure 1: Cold room (4°C)

Wear appropriate clothes when enter the cold room.

The difference in temp. between the lab and cold room ca be larger than 20°C

Remain inside the cold room no longer than necessary.

Inform your colleagues that you'll be inside.

If you are alone in the lab (and you should not), inform someone in the building that you'll use the cold room.





Procedure 2: autoclaves (121-134°C)

Check the machine to be in the optimal status before using it. Use special gloves for high temperatures

Put the stuff to be sterilized inside the machine: bottles must be slightly open.

Execute the process following the procedure described in the user manual (add water in the right place and in right amount, close valves.....)

After the autoclave cycle, wait the machine to cool down and discharge the pressure without trying to open it earlier.

Open the machine when internal temp. is below 90°C.

Protect eyes, hands and body.

It is suggested to wear face shield to limit exposure to the steam.





Procedure 3(a): Ultrafreezers -80°C

Protect hands with gloves for low temperatures.

Check the book titled “-80°C CERM rack and box map” to know the position of the stuff you need or free space for new stuff

Open the freezer keeping it open for the shortest time as possible

Do not remove gloves to handle small vials. Transfer the box on a bench, open it and take/put vials using a tool (e.g. tweezers)

Do not put strange stuff in the freezer, use always vials and boxes.

Register the position of your stuff on the above mentioned book.



Procedures 3(b): Ultrafreezers -80°C

Quick operations on ultrafreezers

- Short exposition of workers to cold
- Short opening time



Procedures 4: UV emitting instruments

UV transilluminator and sterilization lamp of biological hoods emit UV from 250 to 360 nm

Transilluminator: the use of specific goggles and plastic shield integrated in the instrument is **MANDATORY** during the use.

While cutting a agarose gel slice (DNA gel) the use of the facial mask is suggested (take care of your skin on nose and cheeks)

Germicide lamp for hoods. When the UV lamp is on, do not stay in the room. If your presence in the room is required: protect eyes and skin

Do not use germicide UV lamp of the hood longer than 30min..... It is unnecessary. Remember that UV sterilizes only the surfaces. A dirty hood remains not sterile. Clean it!

Procedures 5: ultracentrifuges

Ultracentrifuges: high kinetic energy => serious injury

Before use: inspect rotor, o-rings, tubes and caps.
Everything must be perfectly efficient

Use only centrifuge tubes specifically designed to achieve
the desired speed

Balance the weights of tubes in pairs so that their
difference in weight is within few mg ($< 50\text{mg}$)

Fill the tubes completely

Do not leave the instrument unattended until the desired
speed is reached





Procedures 5: ultracentrifuges

Ultracentrifuges

Our ultracentrifuge with 70Ti rotor generates acceleration larger than 500.000 x g

... centrifuge tubes specifically designed to achieve the desired speed

In case of accident, a spinning rotor that is released from the centrifugation chamber may perforate up to 3 brick walls

Do not leave the instrument unattended until the desired speed is reached



Procedures 6(a): chromatographic apparatus

Chromatographic instruments can generate high pressure. 50 bar for FPLC. Up to 500 bar in HPLC!

Be sure to set appropriate max pressure value in the instrument's software. The max allowed pressure is the pressure value of the more delicate component. Not always the column is the most delicate object.



Procedures 6(b): chromatographic apparatus

- Always protect eyes: risk of spilling during loading samples or corrosive stuff e.g. NaOH for cleaning columns
- Avoid spill of liquids: buffers and additives may get part of the instrument oxidized



Procedure 7:

Casting polyacrylamide gels

Acrylamide is a very dangerous chemical also in solution. Be sure to wear gloves, protection goggles and coat. Work under the hood

Inspect the all the stuff and reagents you'll use to be in good state. Avoid scratched glasses. **Avoid acrylamide spilling.** Use lab paper as a bench cloth to adsorb few drops of acrylamide naturally spilling when you insert the comb.

Before removing the gel and disassembling the casting frame, be sure that acrylamide is polymerized.

Clean bench, casting stuff, pipettes with water. Change your gloves



Procedure 7: Casting polyacrylamide gels

- Addition of 5% glycerol in the resolving gel solution results in an increased difference of density between lower (resolving) gel and top (stacking) gel. It allows you to pour the stacking gel solution and to plug the comb immediatly.

Limited exposition time to acrylamide





Recent improvements

• Ethidium bromide is no more present in our labs. It has been replaced by much less toxic products:

- Sybr safe
- Euro safe



• Pre-casted gel have been introduced to limit the use of acrylamide solution



• Safe stain for polyacrylamide gels

- Methanol free
- Acetic acid free
- Water de-stain



ProBlue Safe Stain
(coomassie)
Methanol and Acetic Acid Free
5L

Cat N. G00PB001
Lot N. CVB00913
Storage: Room Temp.
Expiration date : June 2014





Recent improvements

We have installed a glass windows on the doors of both cold rooms in CERM and Lab 110 in Chemistry Dept.

Watching inside the cold room will allow you to:

- check for presence of a person inside
- see the state of reactions/machines inside



Limited exposition to cold





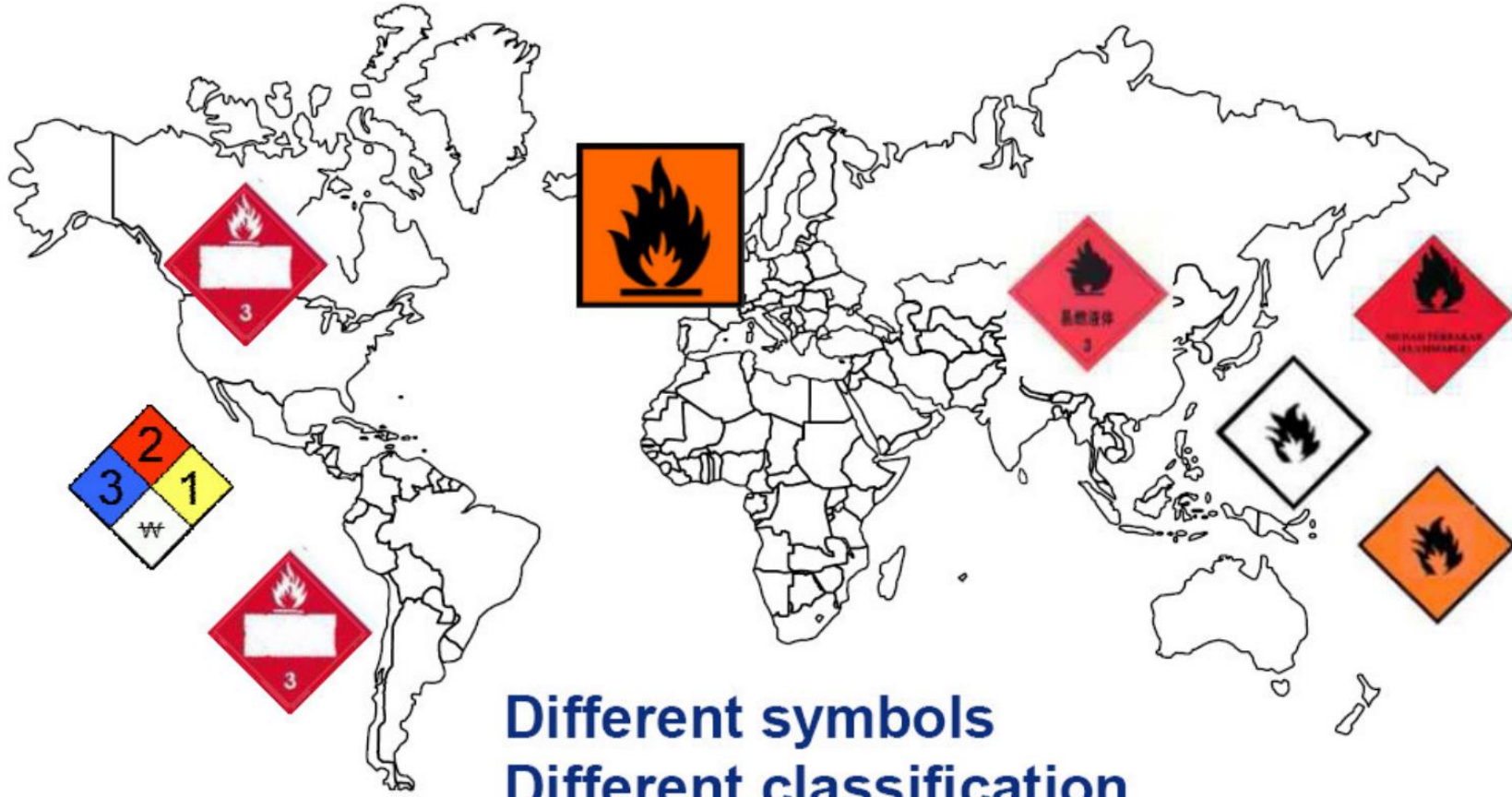
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CLP – Classification, Labelling and Packaging of substances and mixtures



Different labeling world wide



Different symbols
Different classification

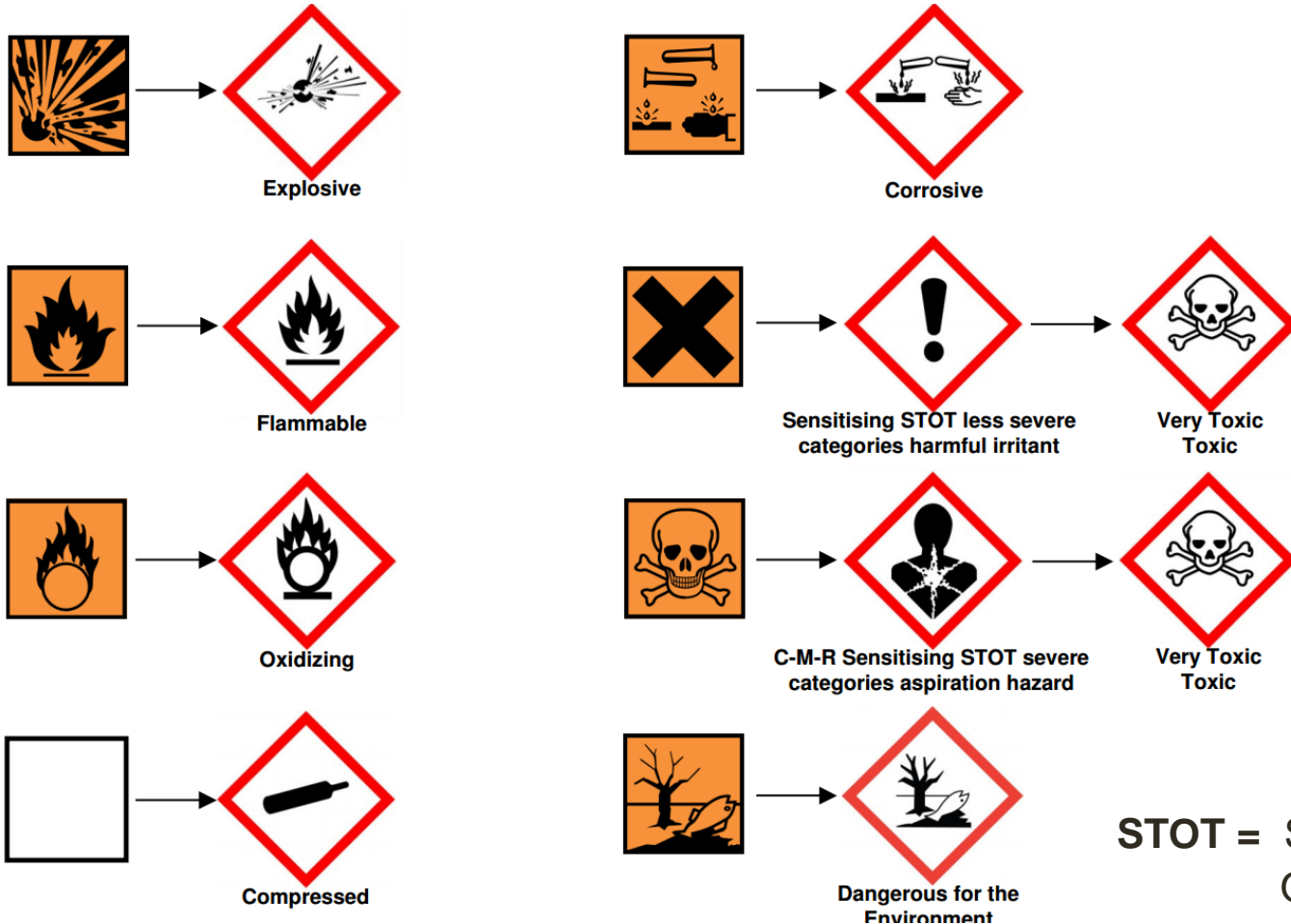
Different classifications of chemicals

- For the same toxicity with a lethal dose in rats of 257mg/kg
- These are the different classifications:
 - **Australia harmful**
 - **Canada toxic**
 - **China not hazardous**
 - **EU harmful**
 - **India non toxic**
 - **Japan toxic**
 - **Malaysia harmful**
 - **New Zealand hazardous**
 - **USA toxic**
- Need a world standard and consistency of labels and classifications for substances.



CLP vs. EU System

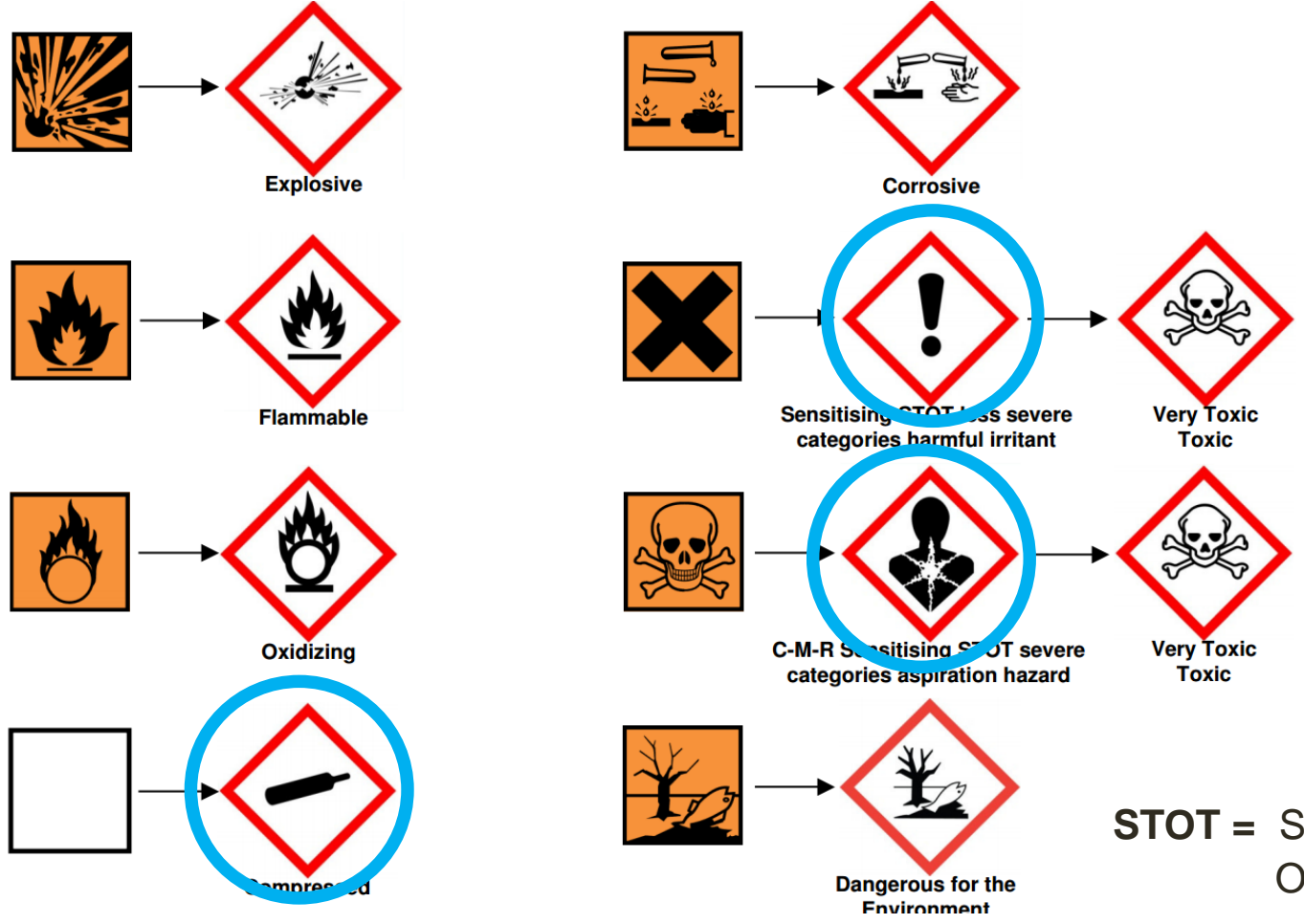
- Compared to the current EU system the most noticeable change are the pictograms (formerly: hazard symbols).



STOT = Specific Target Organ Toxicity

CLP vs. EU System

- Compared to the current EU system the most noticeable change are the pictograms (formerly: hazard symbols).



STOT = Specific Target Organ Toxicity

CLP vs. EU System

- While most of pictograms used in CLP (incorporates GHS) have an equivalent in the old system, some of them are completely new

Gas Cylinder






Exclamation Mark



Health Hazard



CLP vs. EU System

Description	Pictogram	Hazard class and hazard category:
Exploding Bomb		Unstable explosives Explosives of Divisions 1.1, 1.2, 1.3, 1.4 Self reactive substances and mixtures, Types A,B Organic peroxides, Types A,B
Flame		Flammable gases, category 1 Flammable aerosols, categories 1,2 Flammable liquids, categories 1,2,3 Flammable solids, categories 1,2 Self-reactive substances and mixtures, Types B,C,D,E,F Pyrophoric liquids, category 1 Pyrophoric solids, category 1 Self-heating substances and mixtures, categories 1,2 Substances and mixtures, which in contact with water, emit flammable gases, categories 1,2,3 Organic peroxides, Types B,C,D,E,F
Flame Over Circle		Oxidizing gases, category 1 Oxidizing liquids, categories 1,2,3



CLP vs. EU System

Gas Cylinder



Gases under pressure:

- Compressed gases
- Liquefied gases
- Refrigerated liquefied gases
- Dissolved gases

Corrosion



Corrosive to metals, category 1
Skin corrosion, categories 1A,1B,1C
Serious eye damage, category 1

CLP symbols

Skull and Crossbones



Acute toxicity (oral, dermal, inhalation), categories 1,2,3

Exclamation Mark



Acute toxicity (oral, dermal, inhalation), category 4
Skin irritation, category 2
Eye irritation, category 2
Skin sensitisation, category 1
Specific Target Organ Toxicity – Single exposure, category 3

Health Hazard



Respiratory sensitization, category 1
Germ cell mutagenicity, categories 1A,1B,2
Carcinogenicity, categories 1A,1B,2
Reproductive toxicity, categories 1A,1B,2
Specific Target Organ Toxicity – Single exposure, categories 1,2
Specific Target Organ Toxicity – Repeated exposure, categories 1,2
Aspiration Hazard, category 1

Environment



Hazardous to the aquatic environment
- Acute hazard, category 1
- Chronic hazard, categories 1,2



CLP

- CLP stands for stands for the "Classification, Labelling and Packaging of substances and mixtures". CLP is a system that defines and classifies the hazards of chemical products, and communicates health and safety information on labels and material safety data sheets.
- Risk statement R + number and safety statement S + number are replaced by

H - Hazard statement

P - Precautionary statement

- H and P are followed by a number which specifies the type of hazard or precaution



SDS Safety Data Sheet (a)

(Material) Safety Data Sheets is a summary of the health hazards of the material and associated recommended safe work practices.

SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006
Version 5.0 Revision Date 19.02.2013
Print Date 12.10.2013

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product identifiers**
Product name : cis-Diammineplatinum(II) dichloride
- Product Number : C2210000
Brand : Fluka
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
- CAS-No. : 15663-27-1
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified uses : Laboratory chemicals, Manufacture of substances
- 1.3 Details of the supplier of the safety data sheet**
Company : Sigma-Aldrich S.r.l.
Via Gallarate 154
I-20151 MILANO
- Telephone : +39 02-3341-7310
Fax : +39 02-3801-0737
E-mail address : eurtechserv@sial.com
- 1.4 Emergency telephone number**
Emergency Phone # : +39 02-6610-1029 (Centro Antiveneni Niguarda
Ca' Granda - Milano)

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture**
Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 2), H300
Serious eye damage (Category 1), H318
Carcinogenicity (Category 1B), H350
- For the full text of the H-Statements mentioned in this Section, see Section 16.
- Classification according to EU Directives 67/548/EEC or 1999/45/EC
T Toxic R45, R25, R41
- For the full text of the R-phrases mentioned in this Section, see Section 16.
- 2.2 Label elements**
Labelling according Regulation (EC) No 1272/2008
Pictogram
- Signal word : Danger
- Hazard statement(s)
H300 : Fatal if swallowed.
H318 : Causes serious eye damage.
H350 : May cause cancer.

- Precautionary statement(s)
P201 : Obtain special instructions before use.
P264 : Wash hands thoroughly after handling.
P280 : Wear protective gloves/ eye protection/ face protection.
P301 + P310 : IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 : IF exposed or concerned: Get medical advice/ attention.
- Supplemental Hazard Statements : none
- Restricted to professional users.

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

- 3.1 Substances**
Synonyms : cis-Dichlorodiammine platinum(II)
Cisplatin
cis-Platinum(II) diammine dichloride
- Formula : $H_2Cl_2N_2Pt$
Molecular Weight : 300,06 g/mol
CAS-No. : 15663-27-1
EC-No. : 239-733-8

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Cisplatin	Acute Tox. 2; Eye Dam. 1; Carc. 1B; H300, H318, H350	-

Hazardous ingredients according to Directive 1999/45/EC

Component	Classification	Concentration
Cisplatin	T, R45 - R25 - R41	-

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

- 4.1 Description of first aid measures**
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.
- If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
- In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- 4.2 Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11



SDS Safety Data Sheet (b)

- .. from Cisplatin SDS. Sigma Aldrich CisPlatin Cat N. C2210000

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.



SDS where...

- SDS are stored in the lab. cabinet with SDS banner
- Biolab4 software (CERM's Website)

www.cerm.unifi.it -> internals -> Internal User Bioinstruments access

BioLab 4

Login

Your details:

Email address:

Password:

Developer Enrico Morelli © CERM Site

pylons

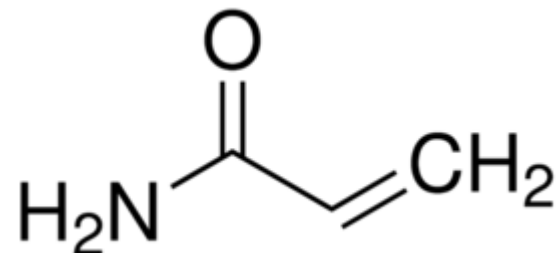
- Can be requested to the vendor
- Website of the producer

Acrylamide... the «beast» (a)

Safety Information

Symbol	  GHS06, GHS08
Signal word	Danger
Hazard statements	H302-H315-H317-H319-H330-H334-H340-H350-H361f-H372
Precautionary statements	P201-P260-P280-P284-P305 + P351 + P338-P310
Personal Protective Equipment	Eyeshields, Faceshields, full-face respirator (US), Gloves, multi-purpose combination respirator cartridge (US), type ABEK (EN14387) respirator filter
Hazard Codes	T
Risk Statements	45-46-20/21-25-36/38-43-48/23/24/25-62
Safety Statements	53-26-36/37-45
RIDADR	UN 3426 6.1/PG 3
WGK Germany	3

- **H330:** fatal if inhaled
- **H340:** may cause genetic defects
- **H350:** may cause cancer





Acrylamide... the «beast» (b)

- **H301:** Toxic if swallowed
- **H312:** Harmful in contact with skin
- **H315:** Causes skin irritation
- **H317:** May cause an allergic skin reaction
- **H319:** Causes serious eye irritation
- **H332:** Harmful if inhaled
- **H340:** May cause genetic defects
- **H350:** May cause cancer
- **H361f:** Suspected of damaging fertility.
- **H372:** Causes damage to organs through prolonged or repeated exposure




Acrylamide... the «beast» (c)

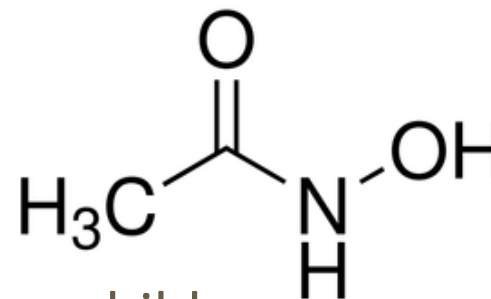
- **P201:** Obtain special instructions before use
- **P280:** Wear protective gloves/protective clothing/eye protection/face protection.
- **P301 + P310:** IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- **P305 + P351 + P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses*, if present and easy to do. Continue rinsing.
- **P308 + P313:** IF exposed or concerned: Get medical advice/attention.

* in Italy contact lenses are forbidden

Acetohydroxamic acid. AHA

Informazioni sulla sicurezza

Symbol	 GHS08
Signal word	Danger
Hazard statements	H360
Precautionary statements	P201-P308 + P313
Personal Protective Equipment	Eyeshields, Gloves, type P2 (EN 143) respirator cartridges
Hazard Codes (Europe)	T
Risk Statements (Europe)	61
Safety Statements (Europe)	53-45
WGK Germany	3
RTECS	AK8157000



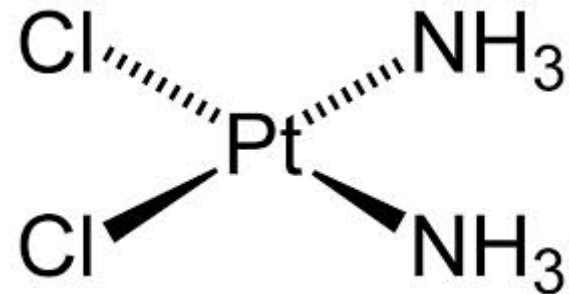
- **H360** : May damage fertility or the unborn child
- **P201**: Obtain special instructions before use
- **P308 + P313**: IF exposed or concerned: Get medical advice/attention.

Cis-Platin

Informazioni sulla sicurezza

Symbol	 GHS05, GHS06, GHS08
Signal word	Danger
Hazard statements	H300-H318-H350
Precautionary statements	P201-P264-P280-P301 + P310-P305 + P351 + P338-P308 + P313
Hazard Codes (Europe)	T
Risk Statements (Europe)	45-25-41
Safety Statements (Europe)	53-26-39-45
WGK Germany	3
RTECS	TP2450000

- **H300:** Fatal if swallowed
- **H318:** Causes serious eye damage
- **H350:** May cause cancer





Cis-Platin

- **P201:** Obtain special instructions before use.
- **P264:** Wash hands and skin thoroughly after handling
- **P280:** Wear protective gloves/protective clothing/eye protection/face protection.
- **P301 + P310:** IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- **P305 + P351 + P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses*, if present and easy to do. Continue rinsing
- **P308 + P313:** IF exposed or concerned: Get medical advice/attention.

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Thank you for attention