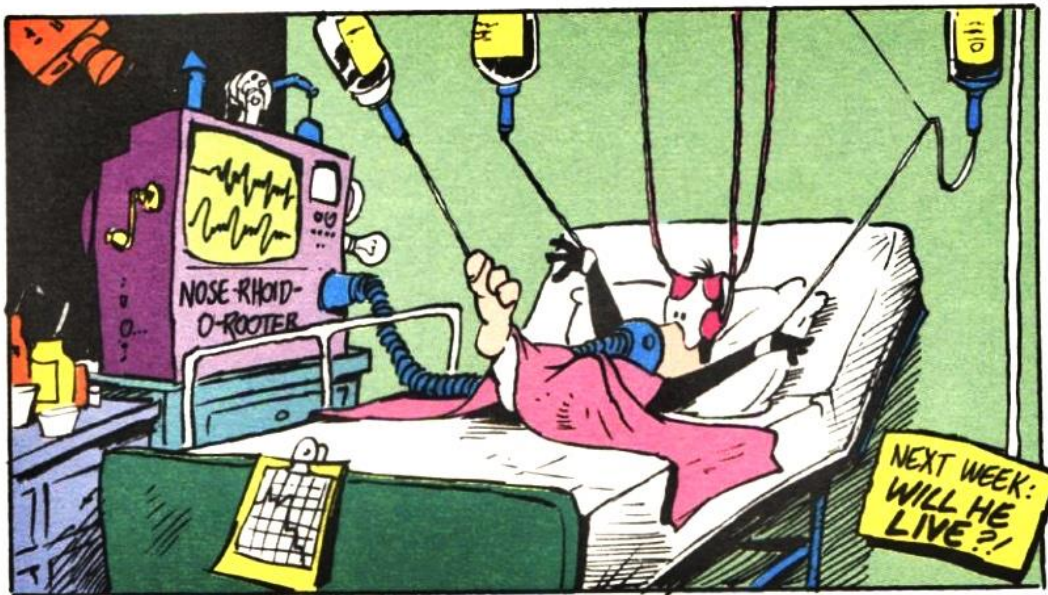


*It is really important to be
aware of the materials you use
and how these could potentially*

COSHH



cause you harm.

BUT DON'T PANIC

or over re-act

*Think - plan -
be safe.*



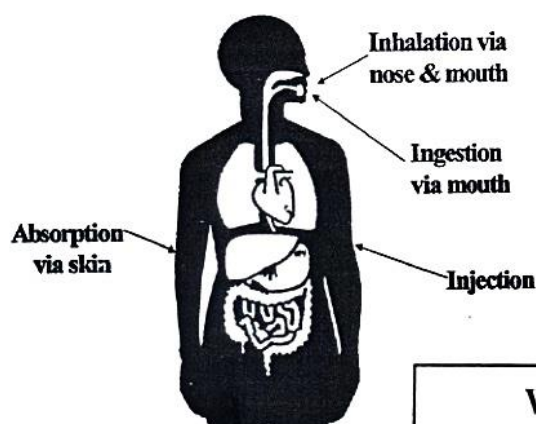
Routes of Entry into the Body

There are four main routes of entry for chemicals into the body. They are namely:

- 1) **Inhalation** – breathe the contaminant into the lungs
- 2) **Ingestion** – eat or swallow the contaminant into the digestive system
- 3) **Injection or inoculation** – needle stick or other penetrating injury
- 4) **Absorption** – contaminant soaks through the skin

Although the human body has integral defence mechanisms to resist the effects of many chemicals, they can be defeated by the nature and concentration of particular substances. Hence, it is best not to rely on these defence mechanisms, but instead to implement safe system of work, such as engineering controls and personal protective equipment.

Four routes of entry for a contaminant



What are Substances ?

Types

- Solids
- Liquids
- Vapours
- Gases
- Biological Agents

Forms

- Crystalline; amorphous; Lumps; dust
- Volatile; non-volatile; Mobile; Viscous; Mist
- Generally denser than air
- Denser, Lighter or similar to density of air
- Bacteria (Legionella), Viruses (HIV), Moulds & Fungi (Hay spores)



The following is a useful list of, Do's and Don'ts for Chemical Handling;

- Do check container label before using,
- Do use appropriate protective clothing and equipment,
- Do open containers carefully, in well ventilated area (beware of pressure building up in containers),
- Do know and understand the hazards of the chemical you are using,
- Do make sure your actions are authorised by your supervisor and or manager,
- Do understand COSHH Risk Assessment detail and work safely to ensure minimum risk for yourself, your colleagues and others who may be affected,
- Do clean up minor spillages,
- Do ensure you report major spillages,
- If in doubt consult with your supervisor and or manager.
- Don't use chemicals if the container labels are missing or damaged so that key information is illegible,
- Don't use contaminated or unsuitable mixing or measuring equipment,
- Don't eat, drink or smoke when handling or using chemicals.



★★★★★ (2 Customer Reviews)

COSHH Regulations Sign

This COSHH Regulation Notice sign is designed to inform people of symbols used on hazardous substances, such as toxic substances and corrosive chemicals. It is a legal requirement for staff to know and understand what each symbol means and what precautions to take in the event of an accident. This sign is perfect for use in staff rooms and work areas, allowing staff to maintain a safe workplace at all times.

Zoom

Zoom

Acute Effects

An acute toxic effect is an immediate response by the body to a single exposure to a substance. This can result in either temporary or permanent damage

Substances Cont:

Types	Forms
• <u>Fumes</u>	Solid particles generated by condensation from gaseous state.
• <u>Mists</u>	Suspended liquid droplets
• <u>Dust</u>	Solid particles of organic or inorganic materials
• <u>Fibres</u>	Solid material with aspect ratio of at least 3:1

Chronic Effects

Repeated exposure to small doses of the toxic substance over a prolonged period of time.

Usually results in delayed effects which can be irreversible, eg the case of exposure to lead

Legal Background

Health and Safety at Work Act 1974

Section 1 - Aims

- To secure the health, safety and welfare of persons at work
- To secure the health and safety of non employed persons from work activity
- Controlling the storage, use and emission of dangerous substances.



Guidance – L131

Approved Classification and Labelling Guide

- Classification on the basis of physicochemical properties: Explosive, Oxidising, Flammable etc
- Classification on the basis of health effects: Toxic, Harmful, Irritant, Sensitising, Carcinogenic etc
- Classification on the basis of environmental effects:
- Labelling
- Labelling – special cases: Mobile Gas Cylinders

Hazard Pictograms used on Container Labels



Harmful
Irritant
Sensitising



Very Toxic/Toxic
Carcinogenic
Mutagenic
Teratogenic
(toxic for reproduction)



Corrosive

Hazard Classifications

- **Very Toxic** - likely to cause lethal effects
- **Toxic** - may cause lethal effects
- **Harmful** - causes damage to skin, lungs or digestive system
- **Corrosive** - causes burns to skin
- **Irritant** - causes inflammation of skin, eyes or respiratory system
- **Sensitising** - causes skin or respiratory hypersensitivity
- **Carcinogenic** - causes cancer
- **Toxic to Reproduction** - causes impaired fertility & developmental toxicity - teratogenic
- **Mutagenic** - causes heritable genetic damage



- ' Step 1. Gather and record information about the substances:
- ' Company name
- ' Name of substance
- ' Name of supplier
- ' Use or uses
- ' Quantity used and stored
- ' Dustiness, volatility and operating temperatures
- ' Existing control measures
- Determine, from the Hazard Data Sheet (section 15), the possible health effects of exposure – Use the Risk Phrase – R.
- Determine the quantity used:

- **Controls**
 - limit exposure time
 - use LEV (Engineering Control)
- **Warning Systems**
 - signs & labels (Administrative Control)
 - Training
 - alarms
- **Use of PPE - LAST RESORT**
- **Health Surveillance**
 - Have a review programme dependant on the level of risk:



COSHH Risk Assessment for Specific Tasks

- ' **I - Information Gathering**
(Register of Chemicals, Safety Data Sheets)
- ' **D - Determine Existing Control Measures**
(Walk-through Survey, Monitor Employee Exposure, including Emissions, Contaminants, etc.)
- ' **E - Evaluation of Risks**
(Compare with Safety Data Sheets, Compare with OELs)
- ' **A - Additional Control Measures**
(Ventilation /LEV, Leakage & Spillage Controls, PPE, Employee Training)



I.D.E.A



Four Routes of Entry into the Body

Inhalation - breathe contaminant into lungs

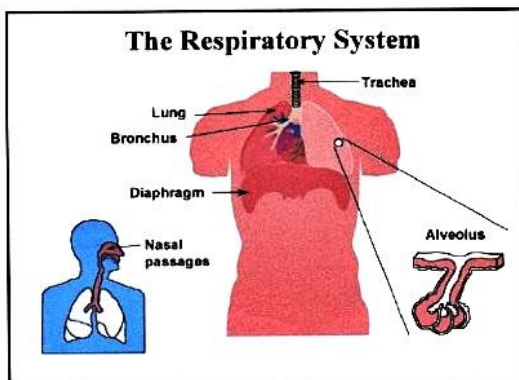
Ingestion - eat or swallow the contaminant

Injection - needle stick or other sharp injury/air/fluids underpressure

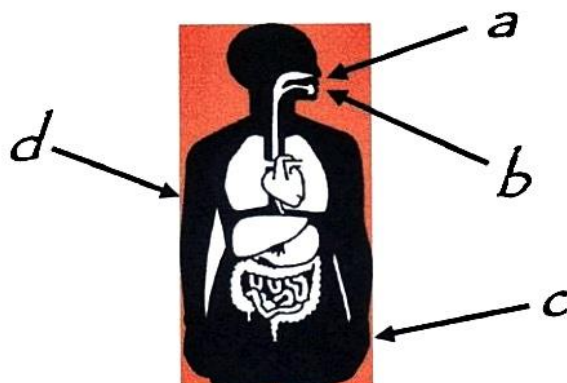
Absorption - contaminant soaks through the skin and eyes into the blood stream



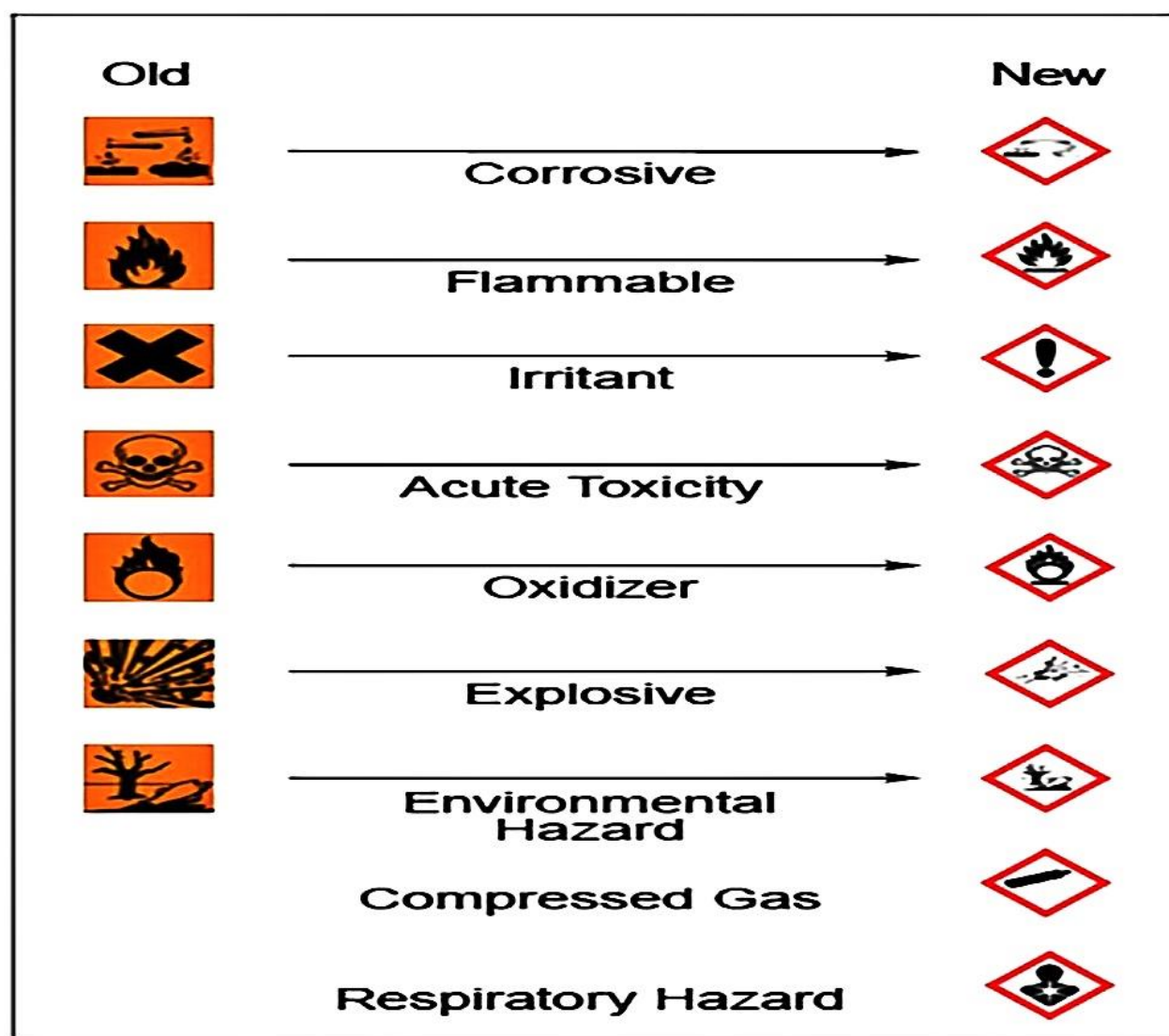
What do you think this means?



ROUTES OF ENTRY INTO THE BODY



How might this occur





TO ALL PERSONNEL

To comply with COSHH regulations

**KNOW THE RISKS!
KNOW THE SYMBOLS!
KNOW THE PRECAUTIONS!**



ALWAYS follow the correct safety precautions, data sheets etc. (failure to comply is an offence under the Health & Safety at Work Act.)
IF IN DOUBT ASK!



SYMBOL & CLASSIFICATION RISK



EXPLOSIVE



FLAMMABLE



**HIGHLY
FLAMMABLE**



TOXIC



CORROSIVE



IRRITANT



HARMFUL



OXIDIZING

GHS

Globally Harmonised System

New system of classification and labelling of chemicals





Physical Hazards



Flammable



Compressed Gas



Oxidising



Corrosive



Explosive

Health Hazards



Health Hazard



Corrosive



Harmful/Irritant



Toxic

Environmental Hazards



Dangerous for the Environment

For more information visit:
www.hse.gov.uk/ghs

COSHH - Do you know all you need to know?

Under COSHH or the Control of Substances Hazardous to Health Regulations 2002, all persons at work need to know the safety precautions to take so as not to endanger themselves or others through exposure to substances hazardous to health. Below are four general classifications of risk - know the appropriate symbols, their meaning and their safety precautions.

Meaning

Toxic

Cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.



Safety Precautions

1. Wear suitable protective clothing, gloves and eye/face protection.
2. After contact with skin wash immediately with plenty of water.
3. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
4. In case of accident or you feel unwell, seek medical advice immediately.

Corrosive

Substances and preparations which, may on contact with living tissues, destroy them.



1. Wear suitable gloves and eye / face protection.
2. Take off all contaminated clothing immediately.
3. In case of contact with skin, wash immediately with plenty of water.
4. In case of contact with eyes, rinse immediately (for 15 minutes) with plenty of water and seek medical advice.

Harmful

May cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.



1. Do not breath vapour / spray / dust.
2. Avoid contact with skin.
3. Wash thoroughly before you eat, drink or smoke.
4. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Irritant

May cause inflammation of the skin or mucus membrane through immediate, prolonged or repeated contact.



1. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
2. In case of contact with skin, wash immediately with plenty of water.
3. Do not breath vapour / spray / dust.
4. Avoid contact with skin.



Material Data

Hazard	Risk

Control measures





Material Data

Hazard	Risk

Control measures





Material Data

Hazard	Risk

Control measures





Safety Data Sheet

SDS No. 402A

Section 1 - Identification

1.1 Product Identifier: Part A for: EZ-Spray[®] Plastic; FeatherLite[®]; FlexFoam-iT[®] Series; Foam-iT! 3, 4, 5, 10, 10 Slow, 15 Plasti-Paste[®] and Plasti-Paste[®] II; Renew[®] Flexible Foam 10# and 25#; Renew[®] Rigid Foam 10#; Shell Shock[®] Fast and Slow; Simpact[®] 60A and 85A; Smooth-Cast[®] 300, 300Q, 305, 310, 320, 321, 322, 385, 45D, 60D, 61D, 65D, 66D, ONYX[®]; StyroCoat[®]; Task[®] 2, 3, 5, 8, 11, 13, 14, 15, 16, 18, 7 FlameOut[®]; Urethane 444; Urethane 666; and Smooth-Cast[®] 380 Part B

1.2 General Use: Polyurethane Elastomer

1.3 Manufacturer: Smooth-On, Inc.,
5600 Lower Macungie Rd., Macungie, PA 18062
Phone (610) 252-5800, FAX (610) 252-6200
SDS@Smooth-On.com

1.4 Emergency Contact: Chem-Tel
Domestic: 800-255-3924 International: 813-248-0585

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

Skin Corrosion/Irritation – Category 2, H315
Eye Damage/Irritation – Category 2B, H320
Acute toxicity, inhalation – Category 4, H332
Respiratory Sensitization – Category 1, H334
Specific target organ toxicity-single exposure – Category 3 (respiratory), H335
Carcinogenicity – Category 2, H351
Specific target organ toxicity-repeat exposure – Category 2 (respiratory), H373

2.2 GHS Label elements, including precautionary statements



Pictograms:

Signal Word: Danger

Health Hazards:	H315	Causes skin irritation
	H317	May cause an allergic skin reaction
	H320	Causes eye irritation
	H332	Harmful if inhaled
	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
	H335	May cause respiratory irritation
	H351	Suspected of causing cancer.
	H373	May cause damage to organs (olfactory organs) through prolonged or repeated exposure (inhalation).
General Precautions:	P101	If medical advice is needed, have product container or label at hand.
	P102	Keep out of reach of children.
	P103	Read label before use.

Prevention	P201	Obtain special instructions before use.
Precautions:	P202	Do not handle until all safety precautions have been read and understood.
	P260	Do not breathe dust/fume/gas/mist/vapors/spray.
	P264	Wash with soap and water thoroughly after handling.
	P271	Use only outdoors or in a well-ventilated area.
	P272	Contaminated work clothing should not be allowed out of the workplace.
Response	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P284	[In case of inadequate ventilation] wear respiratory protection.
	P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
	P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	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 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician.
	P312	Call a POISON CENTER or doctor/physician if you feel unwell.
	P314	Get medical advice/attention if you feel unwell.
	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	P333 + P311	If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.
	P337 + P311	If eye irritation persists: Call a POISON CENTER or doctor/physician.
	P362 + P364	Take off contaminated clothing and wash it before reuse.
Storage	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
Precautions:	P405	Store locked up.
Disposal	P501	Dispose of contents/container according to local, state and federal laws.
Precautions:		

Hazards not otherwise classified (HNOC) or not covered by GHS – none known.

Section 3 - Composition / Information on Ingredients

3.1 Substances

The following ingredients are hazardous according to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR 1910.1200:

CAS	Chemical Name	Concentration
101-68-8	4,4' Methylene bis(phenylisocyanate) (MDI)	15% - 35%
25686-28-6	Benzene, 1,1'-methylenebis[4-isocyanato-], homopolymer	5% - 10%
26447-40-5	Methylenediphenyl diisocyanate	< 1.5%

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation: Remove source(s) of contamination and move victim to fresh air. If breathing has stopped, give artificial respiration, then oxygen if needed. Contact physician immediately.

Eye Contact: Flush eyes with plenty of water. If irritation persists, seek medical attention.

Skin Contact: In case of skin contact, wash thoroughly with soap and water.

Ingestion: Do not induce vomiting unless instructed by a physician. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed: None known.

4.3 After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

5.1 Extinguishing Media: Water Fog, Dry Chemical, and Carbon Dioxide Foam

5.2 Special hazards arising from the substance or mixture: None known.

5.3 Advice for firefighters: Use water spray to cool fire-exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapors. Either allow fire to burn under controlled conditions or extinguish with foam or dry chemical. Try to cover liquid spills with foam. Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure demand or positive-pressure mode.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Only properly protected personnel should remain in the spill area; dike and contain spill. Stop or reduce discharge if it can be done safely.

6.2 Environmental precautions: No special environmental precautions required.

6.3 Methods and material for containment and cleaning up: absorb or scrape up excess into suitable container for disposal; wash area with dilute ammonia solution

6.4 Reference to other sections: See Section 3 for list of hazardous ingredients; Sections 8 for Exposure Controls; and Section 13 for Disposal.

Section 7 - Handling and Storage

7.1 Precautions for safe handling: Use good general housekeeping procedures. Wash hands after use.

7.2 Conditions for safe storage, including any incompatibilities: Keep container(s) tightly closed and properly labeled. Store in cool, dry, well ventilated place away from heat, direct sunlight, strong oxidizers and any incompatibles. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty containers retain residue and may be dangerous. Avoid water contamination.

7.3 Specific end use(s): These precautions are for room temperature handling. Other uses including elevated temperatures or aerosol/spray applications may require added precautions.

Section 8 - Exposure Controls / Personal Protection

8.1 Control parameters:

4,4' Methylene bis(phenylisocyanate) (MDI)	OSHA PEL	CLV 0.02 ppm 0.2 mg/m ³
	ACGIH TLV	TWA value 0.005 ppm

Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

Germ Cell Mutagenicity: no data

Carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. OECD Guideline 453 rat inhalation 0, 0.2, 1, 6 mg/m³ result: lung tumors.

Reproductive Toxicity: Repeated inhalation uptake of the substance did not cause damage to the reproductive organs. Assessment of teratogenicity showed that the substance did not cause malformations in animal studies, however toxicity to development was observed at high doses that were toxic to the parental animals.

Development:

OECD Guideline 414 rat inhalation 0, 1, 4, 12 mg/m³

NOAEL Mat: 4 mg/m³

NOAEL Teratogenic: 4 mg/m³

Specific Target Organ Toxicity – Single Exposure: causes temporary irritation of the respiratory tract

Specific Target Organ Toxicity – Repeated Exposure: no data

Aspiration Hazard: no data

Acute Toxicity: calculated based on MDI

LD₅₀ oral (rat): > 6,250 mg/kg

LC₅₀ inhalation (rat): >6.25 mg/l (OECD Guideline 403)

LD₅₀ dermal (rabbit): > 29,400 mg/kg

Chronic Exposure: NOAEL: 0.6 mg/m³; LOAEL: 3.1 mg/m³ (based on MDI)

Potential Health Effects – Miscellaneous: no data

Section 12 - Ecological Information

12.1 Toxicity:

LC₀ (96 h): > 1,000 mg/l, *Brachydanio rerio* (OECD Guideline 203, static)

EC₅₀ (24 h): > 1,000 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

EC₀ (72 h): 1,640 mg/l (growth rate), *Scenedesmus subspicatus*, (OECD Guideline 201, static)

12.2 Persistence and Degradability: Poorly biodegradable (0% BOD OECD Guideline 302 C).

This product is unstable in water. The elimination data also refer to products of hydrolysis.

12.3 Bioaccumulative Potential: Significant accumulation in organisms is not to be expected.

Bioconcentration factor 200 (28 d) *Cyprinus carpio* (OECD Guideline 305 E)

12.4 Mobility in Soil: Adsorption to solid soil phase is not expected.

12.5 Results of PBT and vPvB assessment: no data

12.6 Other Adverse Effects: The substance will not evaporate into the atmosphere from the water surface.

Section 13 - Disposal Considerations

13.1 Waste treatment methods: Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws. Empty containers retain product residue which may exhibit hazards of material, therefore to not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

And there's more, these are all in H/S files on google docs
so what you do is read, make notes on key points then transfer this Information
into the sheet (EXAMPLE on the next page) the official BATH SPA DOCUMENT



Company Name

University of Bath Spa

Hazardous Substances Risk Assessment - Core Details

Name;

Designation:

Location: TPC

Department / Section (Oldfield Park Theatre Workshops}

Date of Assessment: 17th October 2017

Time of Review:

Task Being Assessed:

The Substance or Product:

Trade Name:

Reference No:

Safety Data Sheet:

Supplier Name:

Emergency Telephone Number:

Suppliers Address:

Telephone Number:

Email:

Web Address:

Hazard Classification

Select Hazard Symbol(s)

1. Aquatic
2. Corrosive
3. Caution
4. Explosive
5. Flammable
6. Oxidising
7. Gases
8. Long Term
9. Toxic

None

Check if Exposure Limits Applicable

Check

Substance:

Exposure Limit

Long Term

Short Term

Physical Properties

Granular

Powder

Dust

Fibrous

Fluid

Mist

Aerosol

Gas
Other (specify)

Brief Details of Health Effects

To be filled in by Assessor / Manager / Supervisor:
Assessor / Manager / Supervisor

Reference No

Signed

Date

© On Safe Lines QHSE Software - www.onsafelines.com

WHAT I PERSONALLY DO THEN IS TRANSFER THIS INTO THE GREEN/ORANGE/RED FORMS SO THAT I IMMEDIATELY KNOW WHAT LEVEL OF PRECAUTION I NEED THESE ARE IN MY OWN FOLDERS.

H/S OFFICIALS CAN AT ANY TIME ASK FOR PROOF YOU HAVE DONE THIS AND THEY DO. SO GET IN THE HABIT, ITS BASICALLY ANOTHER TYPE OF RISK ASSESSMENT BUT CHEMICALS CAN EFFECT PEOPE AND GENDRES IN DIFFERENT WAYS IT IS IMPORTANT TO KNOW.

AS IT SAYS AT THE BEGINNING NO NEED TO PANIC OR FRET JUST PREPARE AND RESEARCH.

IF IN ANY DOUBT ASK