

# TOXICOLOGY

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## TOXICOLOGY

If you are interested in CONTROL,

TOXICOLOGY

↓  
CONTROL of what?  
to what extent?  
why?

## TOXICOLOGY

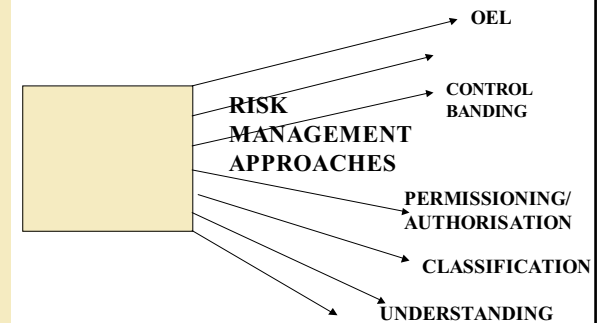
What is it for?  
TOXICOLOGICAL PICTURE

- What can the substance do? and not do?
- Under what exposure/dosing conditions?
- What will/might the consequences be of specified exposure conditions?
- What conditions will/might be “safe”?

Toxicology needs toxicologists

## TOXICOLOGY

Uses of “TOXICOLOGICAL PICTURE”



## TOXICOLOGY

### TOXICOLOGICAL PICTURE

1. PUTTING IT TOGETHER
2. USING IT

Two, separate issues  
(but can't have [2] without [1])

## TOXICOLOGY

### TOXICOLOGICAL PICTURE

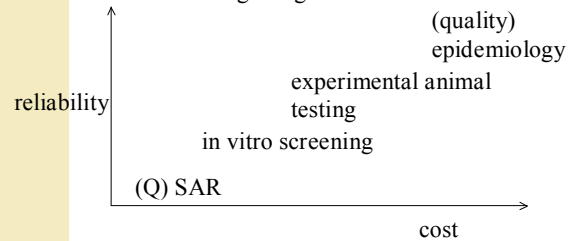
1. Putting it together

For (many) industrial chemicals  
what sort of information do we  
have

## TOXICOLOGY

### TOXICOLOGICAL PICTURE

1. Putting it together



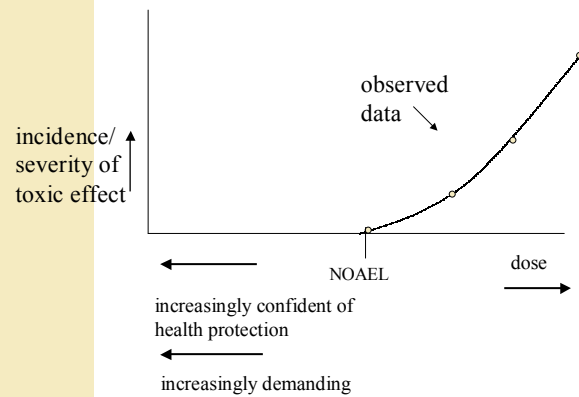
## TOXICOLOGY

### TOXICOLOGICAL PICTURE

What do we hope emerges from it?

- Nature of effects
  - Dose levels at which effects observed
  - No Observed Adverse Effect Level (NOAEL)
- } Classification  
& Labelling

## TOXICOLOGY



## TOXICOLOGY

Problems

- UNCERTAINTIES
- POTENCY
- ADVERSITY
- “NON-IDENTIFIABLE THRESHOLD” EFFECTS

## TOXICOLOGY

TOXICOLOGICAL  
PICTURE

2. Using it

## TOXICOLOGY

TOXICOLOGICAL  
PICTURE

RISK MANAGEMENT APPROACHES

OEL

CONTROL  
BANDING

\* WHAT DO WE WANT TO ACHIEVE?

## TOXICOLOGY

### COSHH ESSENTIALS

What do we want to achieve?

- DELIVER PRACTICAL CONTROL SOLUTIONS
- TO MANAGE RISK AT LEAST AS STRINGENTLY AS OELS
- USING ALREADY -AVAILABLE, "FAMILIAR" TOXICOLOGY INFORMATION (C & L)
- IN AN EASY TO USE MANNER

## TOXICOLOGY

### CLASSIFICATION & LABELLING as a basis for Control Banding

#### Issues

- THOROUGHNESS OF C & L
- EU-AGREED C & L IS A REGULATORY PROCESS (not a purely scientific process)
- ERRING ON THE SIDE OF CAUTION
- WHICH C & L SYSTEM?
  - EU
  - GHS

## TOXICOLOGY

### COSHH ESSENTIALS

#### Validation of the hazard banding Results

Level of control	Number of substances (%)
Scheme equivalent to OEL	52%
Scheme more stringent than OEL	46%
Scheme less stringent than OEL	2%
Scheme equivalent to or more stringent than OEL	98%

## TOXICOLOGY

COLLABORATION BETWEEN TOXICOLOGISTS AND OCCUPATIONAL HYGIENISTS

What do we want to achieve?

