



The Safety Association for Canada's
Upstream Oil and Gas Industry

Controlling Chemical Hazards The Future

ENFORM

- The oil and gas industry created Enform as a not-for-profit organization dedicated to meeting industry's safety needs. Our industry partners recognized then, as they do now, that safety can never be compromised. They also trust in Enform, their safety association, to be the leading resource for the continuous improvement of the industry's safety performance

Enform Industry Partners



Petroleum Services Association of
Canada (PSAC)



Canadian Association of Oilwell Drilling
Contractors (CAODC)



Canadian Association of Petroleum
Producers (CAPP)



Canadian Association of Geophysical Contractors (CAGC)



Canadian Energy Pipeline Association (CEPA)



Explorers and Producers Association of Canada

Agenda

What and Why

- Legislative Issues
- Industry Issues

Key Elements

- Design of Document
 - Roles & Responsibilities
- Communication
- Controls

Controlling Chemical Hazards

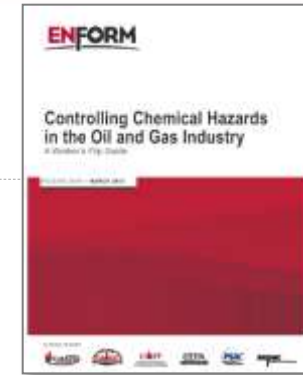
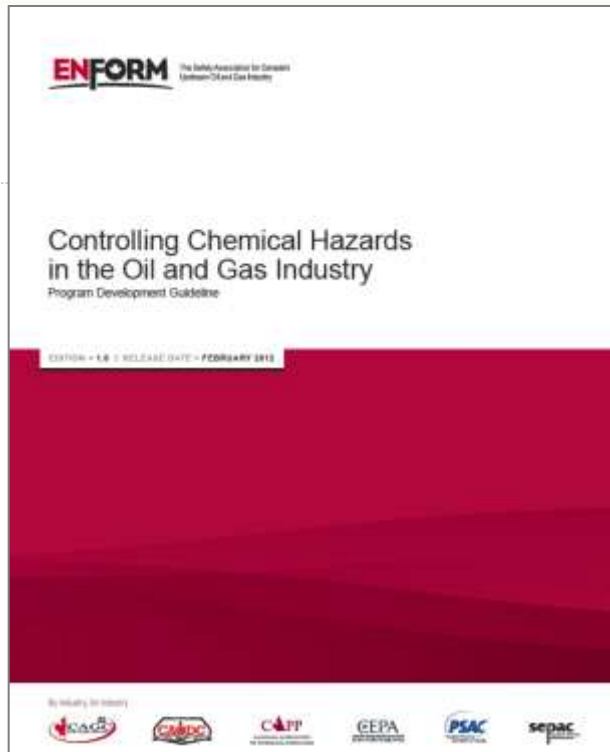
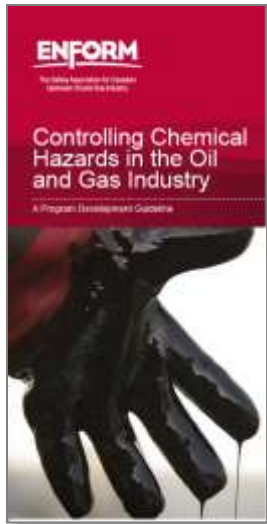
- Implementation
 - Tools



“We need to **educate** our workers
with the right **information**”



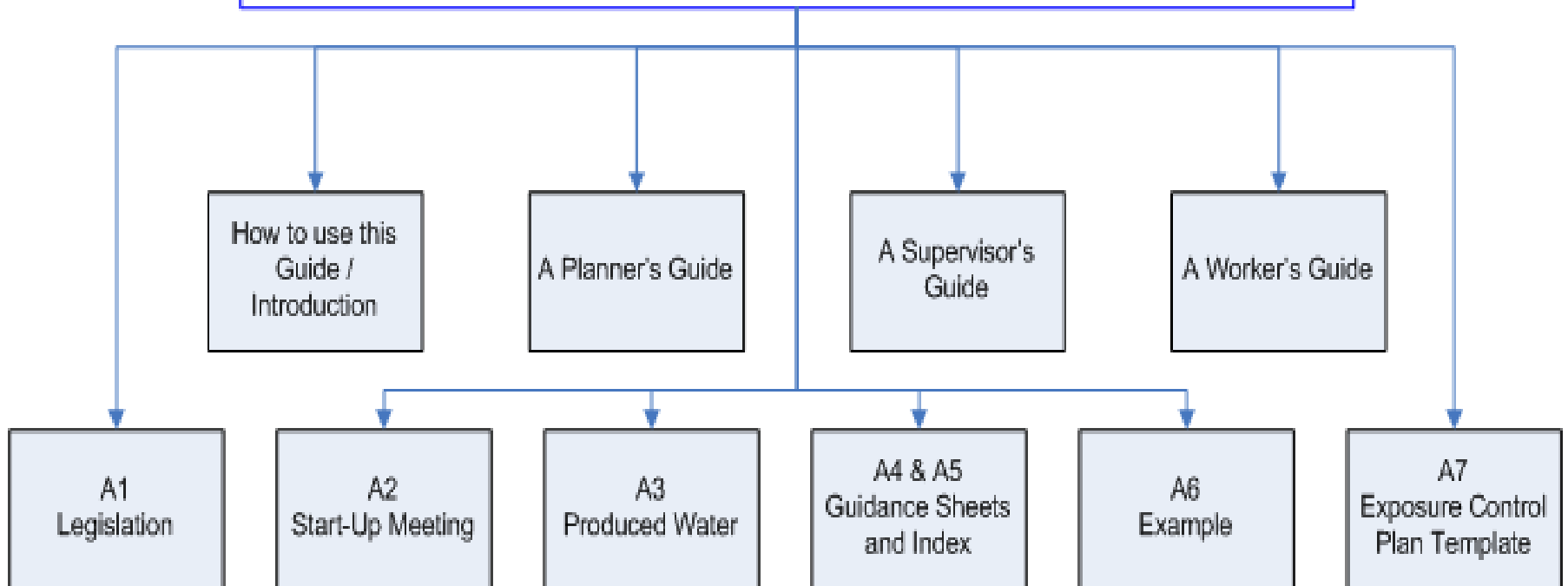
“Proven industry **hazard**...let’s ensure it is adequately **controlled**”

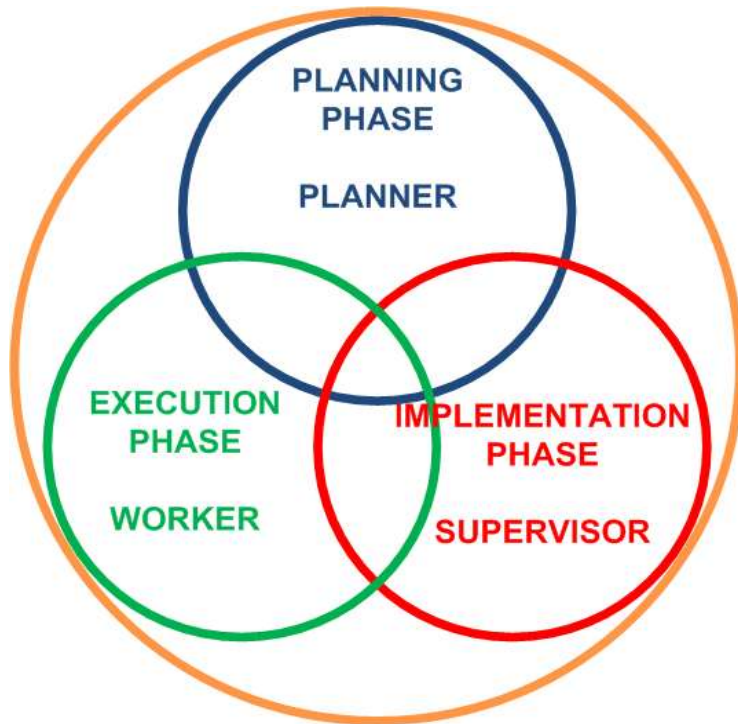


8 “Chemical Hazards, as readily
recognized as Slips, Trips, and Falls”

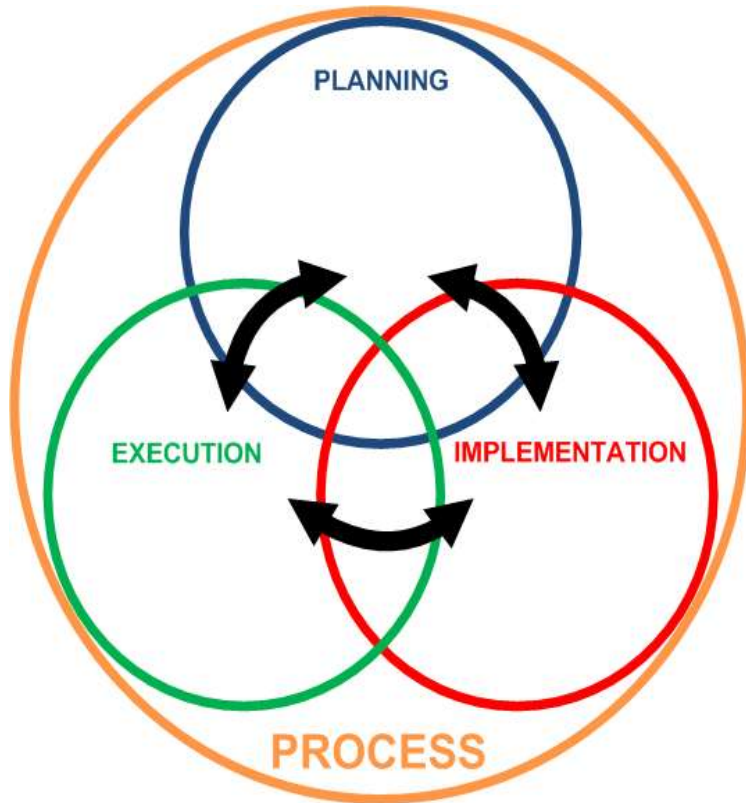
Controlling Chemical Hazards in the Oil & Gas Industry

Program Development Guideline



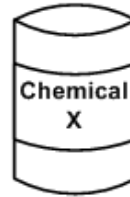


“Planner – Supervisor - Worker
The color coding explains it all”

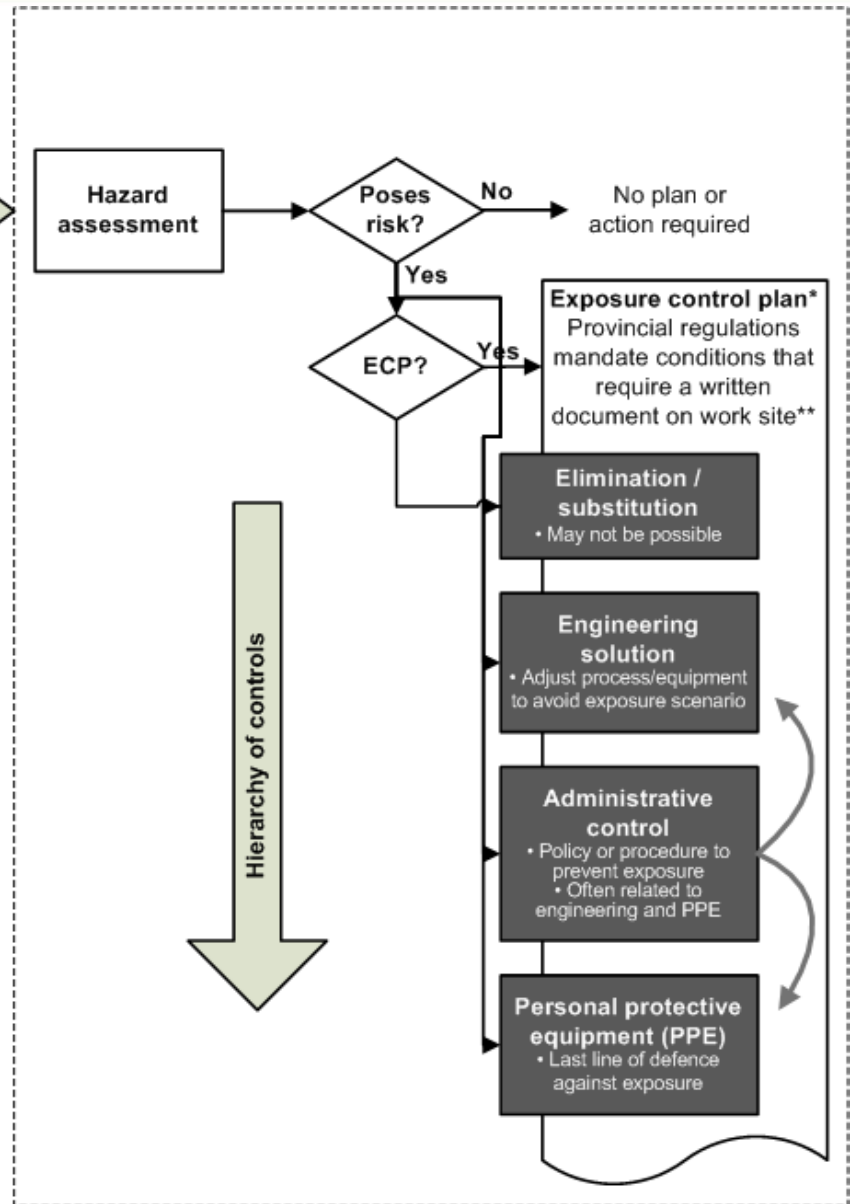


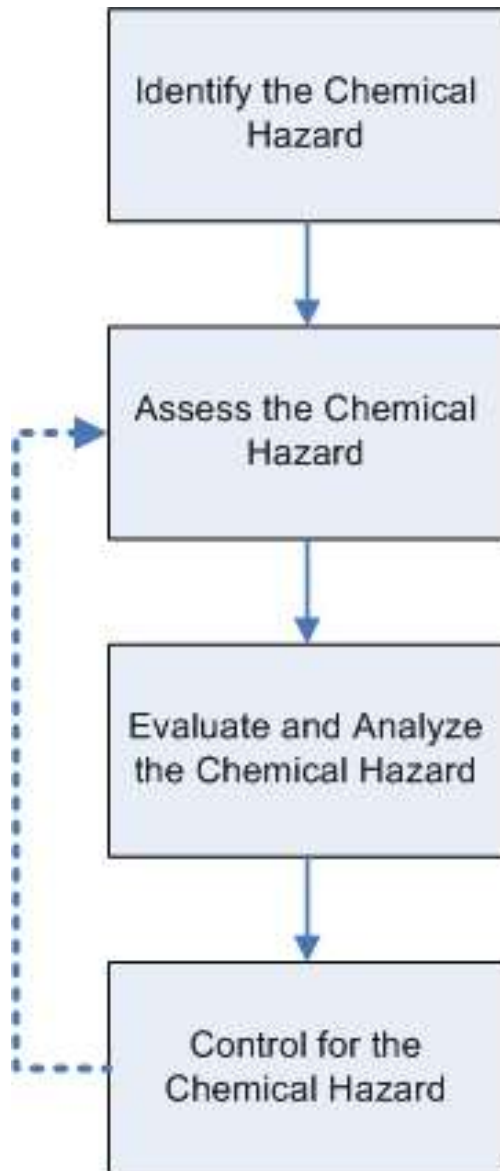
“Communication is the **foundation** to controlling chemical hazards”

“We didn’t REINVENT the wheel...”

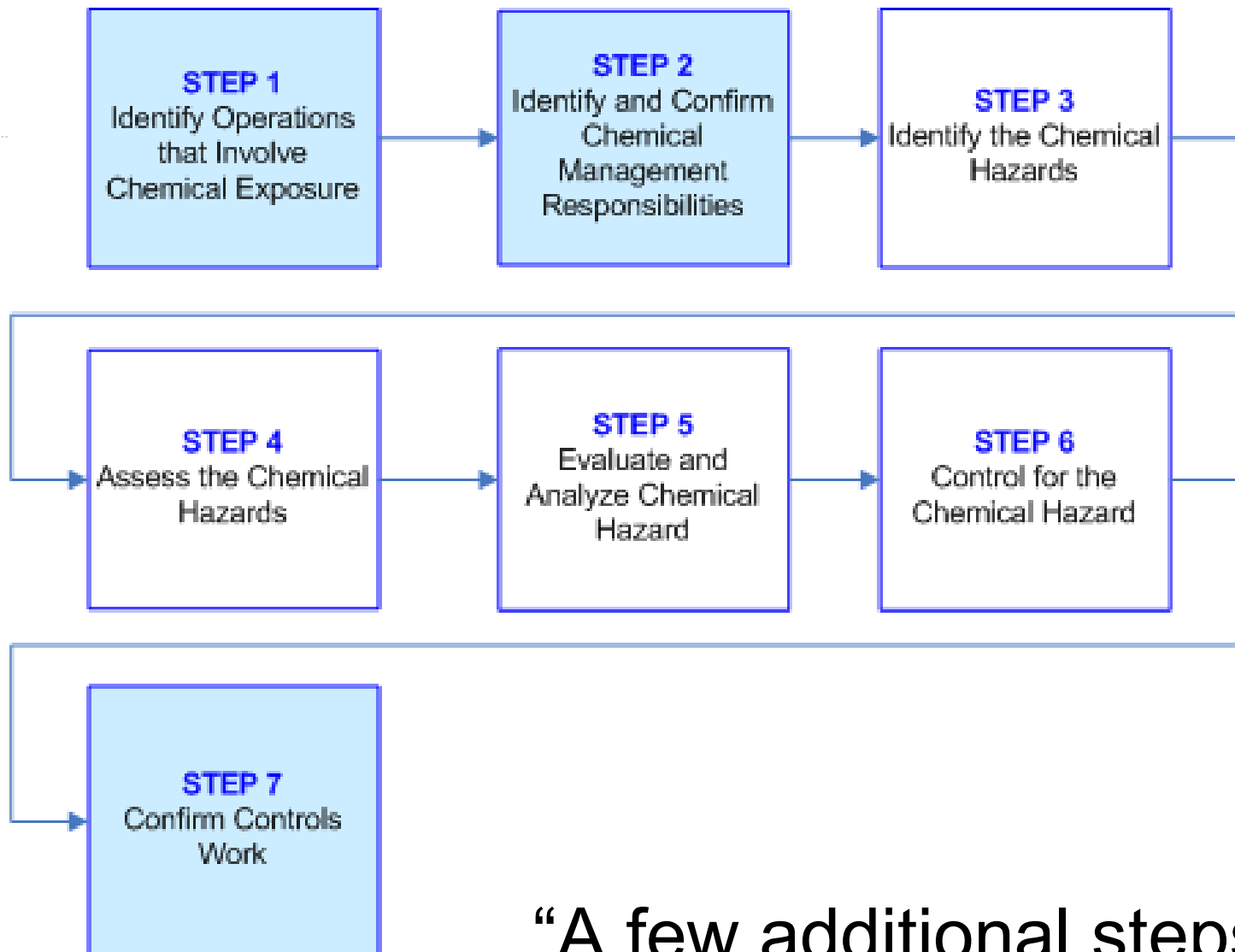


- Chemical X is:
- Considered for project
 - Ordered for project; or,
 - Arriving on work site

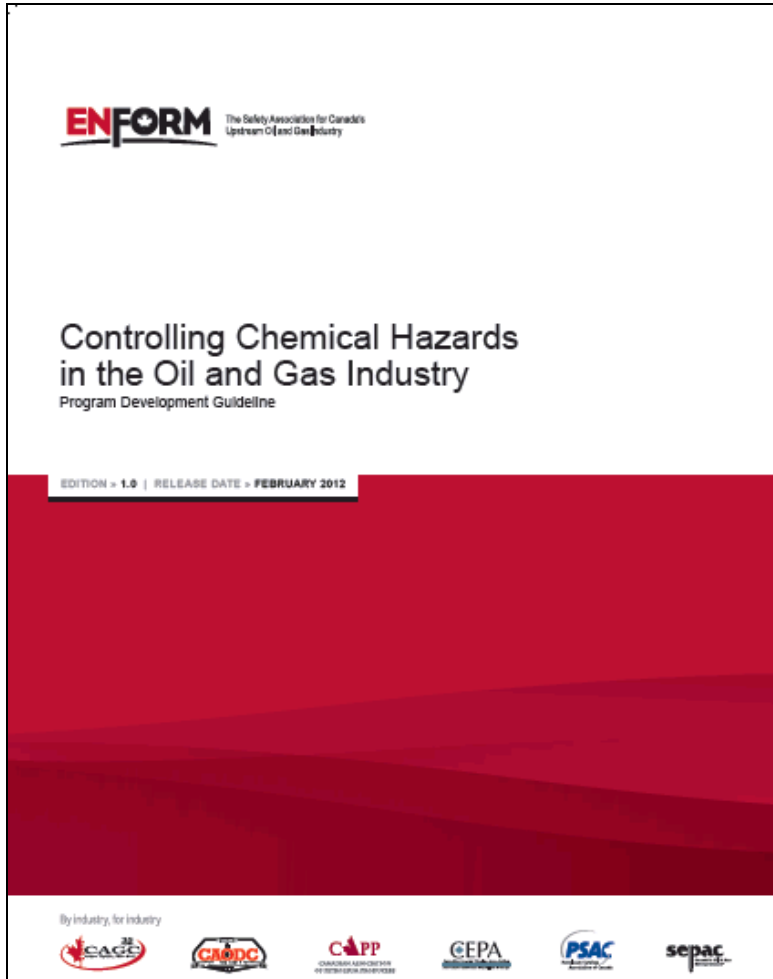




“A hazard assessment is a hazard assessment...
regardless of the hazard.”



“A few additional steps...”



“...an internationally accepted method to control health hazards in workplaces without access to occupational hygienists.”



“Control Banding’s **advantage** is to assess the product in a manner to protect workers without knowing exact composition.”

Hazard Group	European Union Risk Phrases	Global Harmonizing System (GHS) Class/Level Values
Group E	R42 R45 R46 R49 R68	Mutagenicity class 1 or 2; carcinogenicity class 1; respiratory sensitization
Group D	R48/23/24/25 R26/27/28 R39/26/27/28 R40 R60 R61 R62 R63 R64	Acute toxicity (lethality), any route, class 1 or 2; carcinogenicity class 2; repeated exposure toxicity, any route, class 1; reproductive toxicity class 1 or 2 Carc.Cat.3
Group C	R23/24/25 R34 R35 R37 R39/23/24/25 R41 R43 R48/20/21/22	Acute toxicity (lethality), any route, class 3; acute toxicity (systemic), any route, class 1; corrosivity, subclass 1A, 1B, or 1C; eye irritancy class 1; respiratory system irritancy; skin sensitization; repeated exposure toxicity, any route, class 2
Group B	R20/21/22 R40/20/21/22 R33 R67	Acute toxicity (lethality), any route, class 4; acute toxicity (systemic), any route, class 2

List Assessments

Add Assessment

Admin

Create Chemical Assessment

Chemical Assessment Name:

Quantity: Small Medium Large

Sticky:

Sample:

Quantity	Solid		Liquid	
	Weight	Typically Received In	Weight	Typically Received In
Small	Grams	Packets or bottles	Millilitres	Bottles
Medium	Kilograms	Kegs or drums	Litres	Drums
Large	Tonnes	Bulk	Cubic metres	Bulk

CAS Numbers

Mix CAS Numbers

Close

1. CAS Number:

Search

State: Solid Liquid Gas

Concentration: %

Risk Phrases

- R10 Flammable.
- R20 Harmful by inhalation.
- R33 Danger of cumulative effects.
- R51 Toxic to aquatic organisms.
- R52 Harmful to aquatic organisms.
- R53 May cause long-term adverse effects in the aquatic environment.
- R65 Harmful: may cause lung damage if swallowed.
- R66 Repeated exposure may cause skin dryness or cracking.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Group B Harmful on single exposure

Hazard Group S Causes mild and reversible skin and eye irritations



2.	CAS Nu
<input type="checkbox"/>	Ris
	R
	Ha
	Ha
	Bo
3.	CAS Nu
<input type="checkbox"/>	Cu
	R
	Ha
	Bo

<input type="checkbox"/>	R35	Causes severe burns.
<input type="checkbox"/>	R36	Irritating to eyes.
<input type="checkbox"/>	R37	Irritating to respiratory system.
<input type="checkbox"/>	R38	Irritating to skin.
<input type="checkbox"/>	R39	Danger of very serious irreversible effect.
<input type="checkbox"/>	R40	Limited evidence of a carcinogenic effect.
<input type="checkbox"/>	R41	Risk of serious damage to eyes.
<input type="checkbox"/>	R42	May cause sensitisation by inhalation.
<input type="checkbox"/>	R43	May cause sensitisation by skin contact.
<input type="checkbox"/>	R44	Risk of explosion if heated under confinement.
<input checked="" type="checkbox"/>	R45	May cause cancer.
<input type="checkbox"/>	R46	May cause heritable genetic damage.
<input type="checkbox"/>	R48	Danger of serious damage to health by prolonged exposure

5%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Add

Cancel

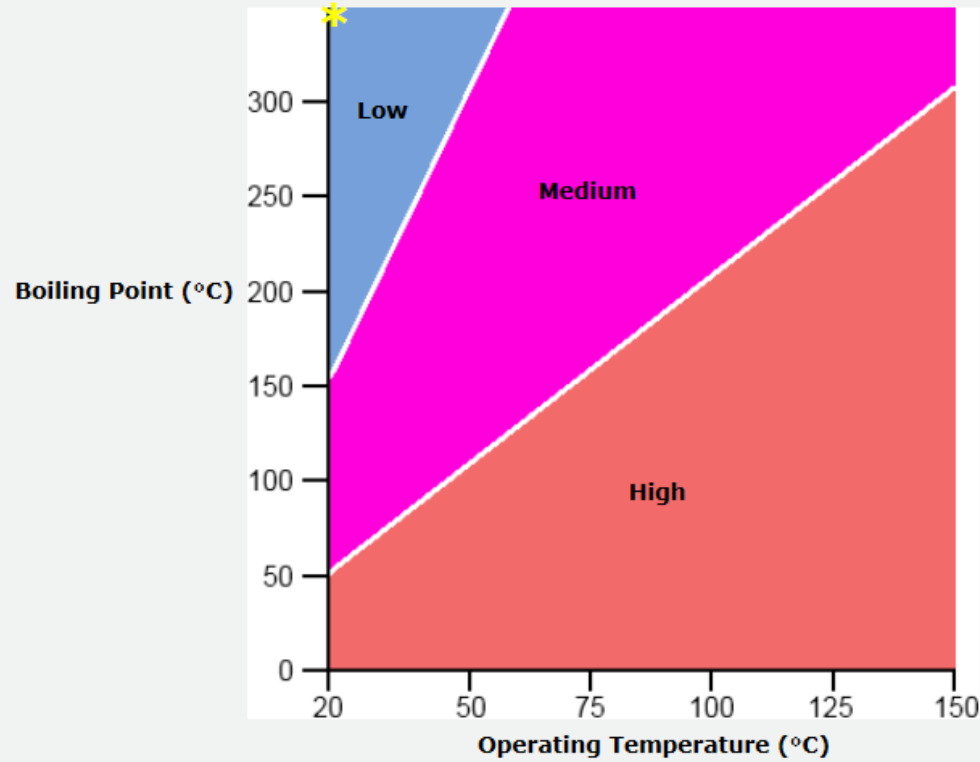
State Exposure Potential

Liquid Volatility

Operating Temperature: °C °F

Boiling Point: °C °F Override

Flash Point: °C °F Override



- Hazard Group
- Risk level
- Control Approach

<u>Exposure Potential 1</u>
<u>Hazard Group</u>
<p>Hazard Group: Hazard Group E</p> <p>Description: Causes cancer by genetic damage; causes occupational asthma</p>
<u>Risk Level</u>
<p>Risk Level: Extreme Risk</p> <p>Description: Eliminate if possible; do process hazard analysis; implement exposure control plan (ECP)</p>
<u>Control Approach</u>
<p>Control Approach: Control Approach Four</p> <p>Title: Special</p> <p>Description: The approach is used when chemicals in the process are either very toxic or the way they are being used makes it difficult to predict how much will be generated in the workplace. Seek a consultant's advice on how to control the risks in such a situation.</p>
<p>Control Approach: Control Approach S</p> <p>Title: Chemicals Causing Harm by Skin or Eye Contact</p> <p>Description: This approach is used where the prescribed primary approach (i.e., 1 to 4) is not effective alone in controlling the risk to workers because the chemical can either be absorbed through the skin or is corrosive or harmful in some other way by direct skin or eye contact. Supplemental protective equipment (e.g., gloves, face shields, aprons) is required.</p>

There are **four** approaches to control inhalation risks.

Approach 1	low risk → natural/dilution ventilation, education etc.
Approach 2	medium risk → extraction/local ventilation
Approach 3	high risk → containing the contaminant
Approach 4	extreme risk → special / requires and expert to evaluate

Call to Action

- Download/purchase a copy of the CCH guideline
- Share the concept with your company and define your companies specific roles & responsibilities
- Communicate, communicate and control



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Thank You

For more information please contact:

Enform

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