ICE
Chemical
Distribution
Safety and Quality

ICE - Distribution Emergency Response Guidelines for use by the chemical industry

These guidelines have been developed within the framework of the ICE programme, which, as an integral part of the Responsible Care initiative by the chemical industry, is a concrete demonstration of its commitment to continuously improve all aspects of performancerelating to the protection of health, safety and the environment

1. INTRODUCTION

Although the chemical industry has a fine record in transport safety, it is committed to continuous improvement. Under its Responsible Care initiative, the statement is: "one incident is one too many".

ICE (international Chemical Enviroment) is a cooperative programme between chemical companies to prevent chemical transport incidents and to respond effectively if and when they do occur. It splits into two areas : Prevention and Emergency Response.

Because each chemical company has a different mix of transport needs: road, rail, sea, liquid, gas, the CEFIC Prevention Working Groups are funded and organised by interested companies. They produce Safety and Quality Assessment Systems (SQAS) and apply them to the performance of distribution service providers such as trucking, shipping and storage companies.

Emergency Response however is required by all chemical companies. It is therefore funded through CEFIC and coordinated across national boundaries by Working Groups involving representatives from existing response schemes. They have prepared this set of guidelines which is a distillation of the best aspects of current practice.

Through this ICE Emergency Response programme, the chemical industry aims to minimise the consequences of transport incidents which involve chemicals by making its expertise available to the Authorities who are normally in charge of the emergency.

2. OBJECTIVE

This document is intended for all chemical companies: guidance is offered on how each individual company should organise itself and which requirements should be met by its responders.

The guidelines can be used either in helping to set up new emergency response schemes or in checking and refining existing ones. They are in the form of checklists and offer several options to meet the requirements, in order to take into account each company's own transport operations and availability of resources.

Their application will ultimately ensure that uniformly competent assistance can be provided in each European country. On a national basis, all these individual company schemes normally group themselves into a network (National Scheme) in order to facilitate mutual assistance (see chapter 5).

3. EMERGENCY RESPONSE PLAN

This chapter sets out the requirements for company plans to respond in distribution emergencies involving chemical products. A suggested profile of a responder is also provided. A summary of the key requirements is included as a quick reference sheet.

It is recommended that level 1 response is the minimum to be expected from a company claiming to practise Responsible Care.

3.1. Scope

Prompt response should be provided to any incident involving chemicals during

- transport by
  - Road, Rail and sub-contractors (e.g. ferry)
  - Inland waterway
  - Sea

- third party storage & handling (incl. ports and airports).

It is usually impractical for chemical companies to provide level 2 and 3 response at offshore shipping incidents. Appropriate response in such cases will require good relationships with the competent Authorities and a network of contacts with marine specialists (in other chemical companies or shipping companies).

3.2. Level 1 response

In all distribution incidents the first requirements from the emergency services is for rapid access to accurate information concerning the chemical involved and the actual and potential hazards posed by the chemical when contained or accidentally released.

The information in an MSDS (Material Safety Data Sheet) is sufficient in most cases and the means of conveying this information rapidly to the emergency services is a minimum requirement for any responsible distributor or manufacturer.

With the more serious incidents there may be a need for detailed product-specific information, such as the hazards created by the product in a fire or when released into the environment. This is the type of information which should be available from product experts and is a service which can reasonably be expected from a manufacturer.

- ***Definition***
  Remote information and general advice.

- ***What is required ?***

  Note: The number between brackets refers to the next paragraph which offers several possibilities on how to meet this requirement.

  - company emergency number known (1)
  - 24 hr manned telephone in each country (2)
  - advice in local language (2)
  - means to contact responders (3)
  - access to up to date MSDS of all own products (4)
  - specialist back up (information beyond MSDS) (5)
  - information gathering and responding procedure (6)
  - access to fax
  - written emergency procedures, periodically tested for compliance
  - tape recording of incoming messages
  - communication with distribution companies (haulier, terminal)

- ***How can the requirements be met?***

1. Make company emergency number known
   - putting emergency numbers on Tremcards
   - provide emergency number to national or regional centre(s)
   - emergency number on Hazchem plate
   - provide emergency number to haulier, ferry operator, terminal, ...

2. 24 hr coverage in local language in each operating country
   - own plant control room
   - national or regional centre
   - sales agents
   - marketing affiliate
   - customs agent
   - terminal operator
   - security service
   - poison centres
   - shipping company/haulier/professional service company
   - independent organisation (NCEC-BIG)
   - arrangement with another company

3. Contacting responders
   - call out list
   - bleeper
   - rotating list (on call rota)
   - call forwarding mechanism
   - police or local radio
   - phone
   - portable fax

4. Access to MSDS

   - link to company MSDS database
   - up to date hard copies in car/at home/where call comes
   - portable PC + modem
   - portable microfiche reader
   - lodge with national centre/poison centre
   - file with hit list of products (e.g. 50 most transported products - 20 most hazardous products)

5. Information beyond MSDS

   - use CEDRE manual - Envirotips - Merck index - NFPA handbook - etc...
   - list with telephone numbers of experts
   - emergency number of supplier of raw materials

6. Receiving calls/providing information to site of incident

   - use emergency call information sheet dedicated
   - emergency telephone line
   - fax
   - use fire brigade network
   - tape recorder.

- ***Who should respond ?***

  People who:
  - understand/interpret MSDS
  - know how to access MSDS
  - know own products/packages
  - know own emergency scheme incl. communication procedures

- know when/how to call in experts or mutual aid schemes
- have incident handling experience (real cases - simulation)
- know about transport equipment / legislation
- are bilingual (local language + "company" language)
- speak in terms fire brigade understand
- know when to consult legal advisers

3.3. Level 2 response

In about 10% of distribution incidents, the emergency services need a company representative at the scene of the incident to give advice. This is a service which can reasonably be expected from a manufacturer, but in order to provide adequate European-wide cover, most companies will need to cooperate with others via national schemes or centres.

- ***Definition***

  Advice following professional assessment on the scene of the incident, when requested by the Authorities. (The company is however free to be present in order to protect its own interests).

  It is important to note that this level of response has 2 distinct aspects:

  - technical: providing advice after having assessed the incident, possibly using
  - personal protective equipment (e.g. breathing apparatus)
  - representational: representing the company's interest vis-à-vis the Authorities/Public

(in case of mutual assistance, the intervening company clearly has only a technical role whereas the representational aspect is left to the requesting company).

- ***What is required ?***

  - level 1 requirements
  - MSDS data / information beyond MSDS
  - communication possibilities
  - delegated authority
  - means for physical inspection of incident
  - rapid travel arrangement to scene
  - adequate insurance

- ***How can the requirements be met ?***
  - company procedure on authority
  - company car/van
  - contact for fast travel by air
  - mutual aid agreements
  - list of available experts
  - portable fax/phone
  - personal protection equipment
  - local language interpreter

- ***Who should respond ?***

  People who:
  - have technical expertise in distribution safety/environment (preferably plant
  - background)
  - are able to assess an incident
  - are able to provide advice on short term measures (evacuation - containment - prevent dangerous actions) in the local language
  - are able to think ahead (whether to invoke level 3)
  - are aware of media impact

3.4. Level 3 response

Since this involves deploying skilled manpower and equipment to the incident site, it can normally only be expected from the larger manufacturers and those who are signatory to product specific schemes (e.g. ethylene oxide, chlorosilanes ...).

Only indications can be given as the actual requirements will very much depend upon product characteristics and technical complexity.

- ***Definition***

  Assistance with equipment and personnel on the scene of the incident, when requested by the Authorities.

- ***What is required ?***

  - level 2 requirements
  - available and maintained intervention equipment
  - technically skilled people
  - company authorisation to act
  - disciplined approach and intervention

- ***How can the requirements be met ?***

  - access to equipment
  - maintenance schedule
  - contract with third party to put equipment at disposal
  - arrangement to transfer the equipment to site of incident
  - mutual aid agreement
  - clear description of task, role, authority and hierarchy within the team
  - provision of back up teams (for long lasting incidents)
  - intervention scenarios

- ***Who should respond ?***

  People who:
  - meet level 2 requirements
  - are able to deal with media / general public / different Authorities (water
  - authority - fire brigade ...)
  - are able to finalize the incident "Leave it as you found it"

3.5. Summary Sheet

DISTRIBUTION EMERGENCY RESPONSE PLAN

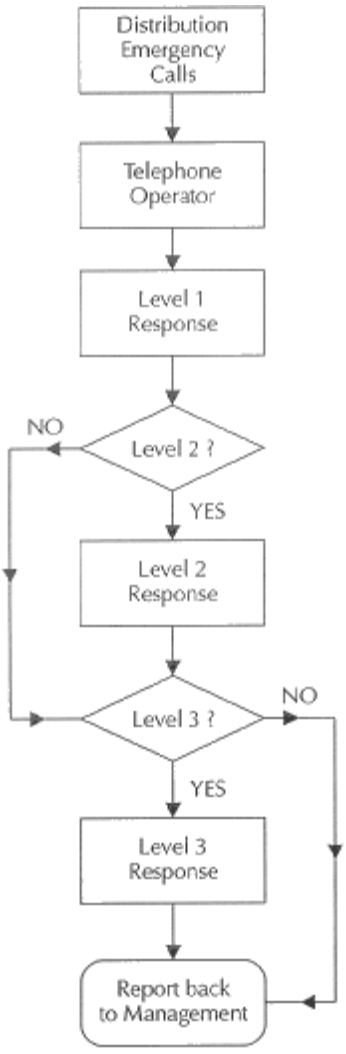
KEY REQUIREMENTS:

- Well communicated emergency telephone number
  - 24 hour cover
  - Call list of Level 1 responders
  - Pagers
  - Tape recorder

- Emergency call information sheet
  - Access to MSDS
  - Access to fax/telex
  - Access to specialists
  - Deal with media and Authorities
  - Internal communication (PR/medical/SHE...)

- Call list of specialists
  - Mobile communications
  - Rapid transport arrangements
  - Deal with media and Authorities
  - Protective and inspection equipment
  - Technical and product data

- Call list of skilled technicians
  - As Level 2 plus:
  - Structured intervention team
  - Appropriate equipment for plugging leaks, transhipment, flareing ...
  - Reporting criteria



4. SKILLS REQUIRED FROM RESPONDERS

Chemical distribution incidents are relatively infrequent so it is unlikely that many companies can afford to have individuals whose job is exclusively emergency response.

This chapter therefore forms a series of checklists for people who normally perform other jobs but are called or on-call for emergencies.

The end aim of this document is to suggest targeted, economic and specific training which is appropriate to most chemical companies.

This training is shown as suggested modular courses merely for simplicity and so that companies can see the whole picture of what is required.

In practice some people will have acquired all or part of the training by experience. In some companies many parts will be covered within in-house training courses. others may wish to use the course outlines to obtain outside quotations.

4.1. Level 1 response

- ***Definition***

  Remote information and general advice.

- ***Job profile***

  Following functions can be involved:

  - telephone operator : receives the call and routes to an emergency responder

    a. emergency responder (level 1a) : using a checklist, gathers enough information to provide (by phone/fax) the appropriate MSDS information to the rescue services

    b. emergency responder (level 1b) : provides general advice by telephone to the rescue services. Preferably has plant experience

  Depending on the size and organisation of a company, some functions may well be one and the same person.

  - specialist : upon request, provides further very specific (product, disposal, transport, ...) advice

- Required skills and training needs

Level	Required skills	Training needs
1a	1. Telephone skills: obtain necessary data to select appropriate MSDS	VI
	2. Familiar with MSDS concept 1	I
	3. How to get additional help	III
	4. Knowledge of company language (additional to local language)	III
	5. Can interpret MSDS I	I
	6. Able to handle emergencies (incl. relations with authorities/media)	II
1b	7. Knowledge of company a. Products b. Packagings c. Emergency scheme	III
	8. Know when response is beyond his capabilities and that specialist advice needs to be called in	-
	9. Basic knowledge about transport legislation of dangerous goods	

- ***Training***
  - I. Guidance on interpreting MSDS
  - II. Emergency management (see 4.4.1.)
  - III. In-house information about company products and procedures
  - IV. Transport legislation (see 4.4.2.)
  - VI. Use of emergency call information sheet (see 4.5. for example)

4.2. Level 2 response

- ***Definition***

  Advice, following professional assessment on the scene of the incident.

- ***Job profile***

  This level of response has 2 distinct aspects :

  - technical : providing advice after having assessed the incident, possibly using personal protective equipment (e.g. breathing apparatus)
  - representational : representing the company's interest vis-à-vis the authorities/Public.

  Experience in plant operations or distribution/environment is necessary.

- ***Required skills and training needs***

Required skills	**Training needs**
Technical only	

• Technical knowledge about (for example)
  ○ Transport equipment, pumps, hoses…
  ○ Protective devices
  ○ Product transfer
  ○ Vehicle recovery
  ○ Stopping leakages
	V

Technical and representational	
• Skills of level 1 responder	I, II, III
• Technical knowledge	V
• Able to assess incidents	-

- ***Training***

  I Guidance on interpreting MSDS
  II Emergency management (see 4.4.1.)
  III In-house information about company products and procedures
  V "Hands-on" (see 4.4.3.)

4.3. Level 3 response

- ***Definition***

  Assistance with equipment and personnel on the scene of the incident.

- ***Job profile***

  This level of response might involve a number of responders, headed by a team leader.

Experience/background should be commensurate with the job.

- ***Required skills***

  - Team leader
    - Skills of level 2 responder
    - Practical experience at incidents
    - In depth knowledge of operational safety

  - Team member
    - Skilled use of protective equipment
    - Practical use of technical equipment (hoses, flanges, pumps,valves,...)
    -

Depending on the equipment available and the products involved, training needs will be imposed by chemical plant operations standards.

4.4. Training course specifications

4.4.1. "Emergency management"

The responder should have experience or have received training in the following, where applicable to the company's operations

- USING A DISCIPLINED APPROACH
  - Developing a concerted team approach
  - Situation analysis
  - Decision analysis
  - Paper simulation

- MEDIA & PUBLIC
  - Objectives of the media
  - How incidents are covered
  - Industry communication objectives
  - What to say and how to behave

- SIMULATED INCIDENT
  - Central control operations
  - Remote incident team
  - From first call to stabilisation
  - Media, authorities & public calls

If the whole course were necessary, it would typically take about 2 days.

4.4.2. "Transport legislation"

The responder should have experience or received training in the following, where applicable to the company's operations.

Part I - Overland transport regulations

1. ADR / RID / ADNR (as applicable)
- structure and systems
- scope (national/international)
- classes and criteria
- packaging requirements/ means of transport
- marking and labelling
- documentation
- prohibition of mixed loading
- special provisions during transport (Tremcard, tunnels, ferries, etc.)

2. Specific country related regulations

3. EC – Directives

- Labelling for user / consumer protection

The duration of such a course is unlikely to exceed 112 day.

Part II - Sea transport regulations

IMDG Code

- structure and systems
- scope (national/international)
- classes and criteria
- packaging requirements/means of transport
- marking and labelling
- documentation (Dangerous Goods Declaration / EMS / MFAG)
- stowage / segregation

This is only necessary if the company is moving substantial quantitiesby sea.
The duration of such a course is unlikely to exceed 1/2 day

Part III - Air transport regulations

ICAO/IATA

- structure and systems
- scope (national/international)
- classes and criteria
- packaging requirements / limitation (pass./cargo)
- marking and labelling
- documentation (Shipping Declaration)

This is only necessary if the company is moving substantial quantities by air.
The duration of such a course is unlikely to exceed 1/2 day.

4.4.3. "Hands-on"

Only response to land incidents is covered.
The responder should have experience or have received training in the following:

1. The principles of operation of the national chemical industry scheme for providing advice and/or assistance to the emergency services in the territory concerned (eg CHEMSAFE, TUIS, etc).

2. The role of the various Authorities at the scene of any transport emergency involving chemicals

3. Principals of design, construction and operation of road tankers, tank containers and rail tank wagons used for the transport of chemicals (for those companies prepared to respond to bulk incidents).

4. Package design, construction and faults (for those companies prepared to respond to packaged goods incidents).

5. Labelling systems and product identification measures.

6. The measurement of toxic and flammable hazards.

7. The suitability of personal protective clothing for protection against different types of chemicals.

8. Use of portable breathing apparatus.

9. Methods of dealing with spillages, leaks, product recovery and waste disposal.
10. Dealing with the media at the incident scene (if authorised by company).

11. Practical transport emergency exercises, as a team leader or member of a team.

If the whole course were necessary, it would typically take about 3 days.

4.5. Emergency Call Information Sheet

This sheet is available in Adobe Acrobat PDF format.
You are invited to download it. Please click here: ice-guide4-5.pdf - 78 Kb

EMERGENCY CALL INFORMATION SHEET

Date: _____ Time: _____ Name: _____

Name of caller: _____

Company / Authority: _____

Telephone: _____ Fax: _____

Location of incident (road, town, country): _____

_____

_____

What happened: _____

_____

Product name(s) _____

UN Number _____ ☐ GAS ☐ POWDER

Haz Id number _____ ☐ LIQUID ☐ PELLETS

Emerg Act Code _____ ☐ SOLID ☐ _____

Incident type ☐ ROAD ☐ SHIP ☐ PRODUCTION ☐ _____

☐ RAIL ☐ TERMINAL ☐ WAREHOUSE

Containment ☐ TANKER ☐ DRUM ☐ BAG ☐ IBC

☐ CONTAINER ☐ BOTTLE ☐ BOX ☐ _____

Unit size / weight: _____ Total: _____ Amount damaged: _____

☐ FIRE ☐ SPILLAGE Amount of spillage: _____

Rate of leakage: _____

Remarks (weather, topography, environment) _____

_____

_____

EMERGENCY CALL INFORMATION SHEET (CONT'D)

Shipper _____

_____

Consignee _____

_____

Measures taken by ☐ POLICE ☐ FIREBR ☐ MEDIC ☐ DRIVER

☐ _____

_____

Type of help required

Info	☐ PRODUCT	Expert to site	☐ PRODUCT	Equipment to site	☐ FIREFIGHT
	☐ TECHNICAL		☐ TECHNICAL		☐ TECHNICAL
	☐ MEDICAL		☐ MEDICAL		☐ CLEANUP

Action taken

_____

_____

_____

_____

SPELLING ALPHABET

A ALFA	**F** FOXTROT	**K** KILO	**P** PAPA	**U** UNIFORM
B BRAVO	**G** GOLF	**L** LIMA	**Q** QUEBEC	**V** VICTOR
C CHARLY	**H** HOTEL	**M** MIKE	**R** ROMEO	**W** WHISKY
D DELTA	**I** INDIA	**N** NOVEMBER	**S** SIERRA	**X** X-RAY
E ECHO	**J** JULIET	**O** OSCAR	**T** TANGO	**Y** YANKEE
				Z ZULU

5. NATIONAL SCHEME AND CENTRE

5.1. General

A distribution emergency plan of an individual chemical company is firstly intended for products that the company manufactures or distributes. However, help may be required by the Authorities if a supplier cannot be contacted or by other companies if they are too distant from the scene of the incident. On the basis of a prior commitment, companies may volunteer to offer mutual assistance for well defined products and at a specified level.

5.2. National Scheme

A National Scheme registers this commitment and is the formal framework, agreed both within the chemical industry and with the national Authorities, to facilitate mutual assistance. Such schemes currently exist already in Germany and Austria (TUIS), France (Transaid), United Kingdom (Chemsafe), Switzerland (AC Schutz), Italy (SIET) and are being developed in other countries.

5.3. National Centre

A National Scheme usually includes a National Centre or Regional Centre(s), which may be contacted 24 hr/day. It will provide initial advice but will also endeavour to mobilize industry resources. If necessary it will look for assistance across country boundaries.

5.4. Emergency Response Flowchart

The usual flow of response by the chemical industry to distribution emergencies, is illustrated by the following flowchart.