# ALLEGATO 2.4 punto 39

# Procedura interna relativa all'utilizzo delle sostanze chimiche.

| | | |
|---|---|---|
| TOTAL | TEMPA ROSSA PROJECT | TEMPA ROSSA |

# HAZARDOUS SUBSTANCES MANAGEMENT

## DOCUMENT N°: IT-TPR-SI-SET-000018

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# 1. PURPOSE

This procedure sets the minimum requirements for protecting health & safety of personnel and assets, and the environment, from risks that derive or may derive from the effects of hazardous chemical agents in the workplace, or as a result of any work activity that includes the presence of chemical agents pursuant to EP Directive 01 and its principle HSE 06 “Health Protection” and Italian law in the area of workplace health and safety (Leg. Dec. 81/08).

It also takes into account new international harmonized system of hazards pictograms as per EC regulation called CLP (Classification, Labelling and Packaging of chemical substances and mixtures).

# 2. SCOPE

This procedure applies for all TEPIT Tempa Rossa Project entities and facilities, for all operations. It can also be applied on external sites where operations may be performed under the responsibility of TOTAL EP Tempa Rossa.

# 3. DEFINITIONS

**Chemical Agents**
All chemical elements or compounds, either alone or mixed together, in their natural state or obtained, utilised or disposed of, including disposal as waste, through any work activity, whether produced intentionally or not, and whether or not they are deployed in the market.

**Hazardous Chemical Agents** (defined as per Regulation (EC) No 1272/2008):

1. Explosives
2. Flammables
3. Oxydizing
4. Compressed Gases
5. Corrosive (for metals & skin)
6. Acute Toxicity
7. Skin Irritation
8. CMR (Carcinogenic, germ cell mutagenic, toxic to reproduction), STOT (specific target organ toxicity), Aspiration Hazard
9. Hazardous for the Environment

**Occupational exposure limit values**
Unless otherwise specified, the maximum average time-weighted concentration of a chemical agent in the air inside the breathing area of a worker in relation to a set reference period:

- **TLV-TWA** (Threshold Limit Value-Time Weight Average), daily maximum exposure. This is the average time-weighted concentration, for an 8-hour work day and 40-hour work week, to which all workers can be repeatedly exposed, day after day, without negative effects,

- **TLV-STEL** (Threshold Limit Value-Short Term Exposure Limit), maximum for brief exposure time. This is the concentration to which workers can be continuously exposed for a brief period of time without causing rashes, chronic or irreversible effects

**TLV-C (Threshold Limit Value – Ceiling):** ceiling exposure limit or maximum exposure concentration that should not be exceeded under any circumstance, while meeting the daily TLV-TWA

**BEI: Biological Exposure Indices:** represent the concentration of chemicals in the body that would correspond to inhalation exposure at a specific concentration in air

**IDLH (Immediately Dangerous to Life or Health concentration)**
Concentration of a chemical that when breathed can cause a hazard to life and health, taking into account a safety margin, based on the effects that might occur as a consequence of a 30-minute exposure. However, this 30-minute period in no way implies that personnel can remain in the contaminated environment more than the time required for evacuation. The values are published by the NIOSH

# 4. DOCUMENTS OF REFERENCE

## 4.1. Internal within Total E&P Italia

| Reference | Title |
|---|---|
| **PR-2-HSE-06-04** | **Prevention of chemical health risks** |
| PR-2-HSE-04-03 | Job Risk Assessment |
| PR-2-HSE-06-02 | Health Plan |
| PR-2-HSE-10-01 | Accident Management Operating Procedure |
| PR-2-HSE10-02 | Anomaly Management Operating Procedure |
| PR-2-HSE-06-01 | Industrial Hygiene Risk Assessment |
| PR-2-HSE-07-01 | HSE Policy for managing contractors |
| GM-2-HSE-07-01 | Contractor management |
| IT-TPR-SP-SET-000009 | Personal Protective Equipment |
| IT-TPR-GE-SET-000002 | Site waste management plan |

## 4.2. External

| Reference | Title |
|---|---|
| Regulation (EC) No 1272/2008 | Of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures |
| REGULATION (EU) No. 453/2010 | REGULATION (EU) No. 453/2010 OF THE COMMISSION of 20 May 2010 amending Regulation (EC) no. 1907/2006 of the European Parliament and Council concerning the registration, evaluation, authorisation and restriction of chemical substances (REACH) |

**From TPR Project**

| | |
|---|---|
| IT-TPR-GE-SET-000011 | Welding/cutting and use of industrial gas |
| IT-TPR-SP-SET-000011 | Site Emergency Response Plan |
| IT-TPR-SP-SET-000041 | Site oil Spill Contingency Plan |

# 5. RESPONSIBILITY

## 5.1. Contractor Management

Contractor Management is responsible for:

- Ensuring the implementation of a procedure to assess risks related to Hazardous Substances;
- Respecting the legislation, particularly regarding Job Risk Assessment and workers' chemicals exposure log., and also for the use, labelling, storage and transport of chemicals.

## 5.2. Site HSE personnel

Site HSE personnel is responsible for:

- ensuring compliance with this procedure
- ensuring that Contractor Management applies it
- advising management and the involved disciplines
- training directly and coordinating trainings for personnel
- monitoring compliance through audits and inspections
- following up actions and report to RSES and HSE Office
- suggesting improvement actions to management

## 5.3. RSES

The Site Health, Safety and Environment Responsible (RSES) or Delegate (RSESd) of Tempa Rossa Project will be responsible for implementing this procedure on its site, and ensuring that Contractors implement an equivalent procedure.

## 5.4. Occupational Physicians

The Occupational Physicians:

- cooperates with Line Management and HSE
  - in assessing risks of exposure to hazardous, carcinogenic and mutagenic chemical agents, including for purposes of scheduling health monitoring;
  - in implementing measures to protect health;
  - in informing and training workers;
  - in organising the first-aid service;
- schedules and conducts health monitoring for workers exposed to chemical agents that are hazardous;
- schedules, conducts and informs the affected worker of the results;
- establishes a health and risk file for any worker subjected to health monitoring;
- keeps the log of exposure to carcinogenic and mutagenic agents;
- gives workers (and upon request safety workers) information on the significance of the health monitoring, and, for agents with long-term effects, on the need to undergo health checkups after ending the activity that involves exposure;
- informs every affected worker of the results of the health and biological monitoring and, at the worker's request, issues a copy of the health documentation;
- communicates in writing to the Employer, the RSPP and the Worker Safety Representatives, at periodic meetings, the collective anonymous results of the health and biological monitoring conducted and gives an indication of the meaning of said results for purposes of implementing measures to protect the health and psychological and physical integrity of the workers;
- visits work environments at least once a year or more frequently as established according to the risk assessment;
- participates in scheduling worker exposure checks, the results of which are promptly provided for purposes of risk assessment and health monitoring;
- in the event that health monitoring reveals, in a worker or group of workers exposed similarly to the same chemical agent, the existence of harmful effects on health attributable to said exposure or the surpassing of a biological limit value, informs the affected workers individually and the employer.

# 6. PROCEDURE

## 6.1. Issues common to Health, Safety, Environment

In selecting construction materials (insulating materials, paints), direct and indirect risks (for example, combustion products in case of fire) must be taken into account.

This assessment is documented (SOR, Safety Concept) and the hazards identified are taken into consideration during Project Technical Reviews (PTR) and/or HSE audits (cf. CR EP HSE 032).

### 6.1.1. Hazard identification: Inventory of chemicals and location of users' information

An inventory of chemicals purchased, produced, or disposed shall be created and maintained by TEPIT and Contractors Site Management, respectively to their scope.

This Hazardous Substances Register consists of an updated list of the chemicals and all the related MSDS. It shall be located at:

- The Medical Centre on site
- The Site HSE Office
- At the location where chemical products are stored.

The Job specific MSDS shall be located at the storage location and at the workplace (as part of the attachments of the Permit To Work, warehouse, workshop, etc.).

Note: products deriving from processing and production, and the waste resulting from these activities must be identified as well (example: drilling muds).

### 6.1.2. Labeling

In the workplace, personnel are kept informed primarily by reading labels. The nature of the product and its hazard characteristics must appear clearly on all packaging and all storage areas (pictograms). This is especially important in the laboratories where many different substances are present, and on the workshop and workplaces where chemicals are transferred from originally labelled containers to bottles or other previously used drum.
Language shall be Italian, as a minimum.
The European Community CLP Regulation (stand for « Classification, Labelling and Packaging » (EC n°1272/2008) implements the internationally agreed Globally Harmonized System for Chemicals.

⇨ **For regulatory labeling, see pictograms in *Appendix 7.1***

Site HSE personnel shall monitor that the labels are maintained, and implemented by the involved discipline (painting, maintenance, etc.).

### 6.1.3. Exposure and risk assessment

Once the products, compounds or mixes posing hazards are known, Line Management + Occupational Physician and HSE shall determine situations of possible exposure of personnel to these hazards, and assess the associated risks.

- **To assess Safety Risk: Table/matrix from Job Risk Assessment PR-2-HSE-04-03.**
- **To assess Health Risk: see PR-2-HSE-06-01**

### 6.1.4. Risk Control

Risks must be reduced in phases and using various means in order to bring them down as much as possible, taking into account the techniques available and their cost (ALARP – As Low As Reasonably Practicable).

As a principle, follow these chronological steps:

1) Substitute hazardous product by a less hazardous one
2) Create adequate safe working procedures
3) Reduce exposure/release:
    a. from emissions, by extracting vapours for example,
    b. create a containment to prevent expansion
    c. maintain equipment and tools in safe condition to prevent leaks (example: check valves, connections, etc.)
    d. provide and use personal protective equipment, according to the MSDS
4) Train adequately the personnel to be exposed (see after)
5) Emergency: Prepare for incident situations

### 6.1.5. Training and Awareness

All personnel shall be made aware of chemical hazards identification and pictograms and inducted on what to do in case of emergency linked to chemical release.

Specifically involved personnel (laboratory, painters, storekeeper, Hazardous Material truck drivers, HSE personnel, etc.) shall be trained on chemical hazards, prevention and response. They shall also be informed about the MSDS of each chemical they may be exposed to.

Emergency Response personnel shall be trained on the specific measures to be implemented in case of release, fire, personnel exposed, etc.

HSE personnel, also trained on it, is responsible for performing directly or coordinating trainings, maintaining the Training and Awareness Register.

### 6.1.6. Emergency Response

See:

- Site Emergency Response Plan IT-TPR-SP-SET-000011
- Site oil Spill Contingency Plan IT-TPR-SP-SET-000041

- **First aid devices on site**

On site, on each area where hazardous substances are present, Safety showers, eye wash stations and first aid boxes shall be made available.

*Examples of eye wash stations specific for temporary construction fields (portable)*

*Examples of safety shower and eye wash station specific for operating plants (fixed and permanent)*

- **Fire fighting means for combustibles and flammables**

Work Supervision, with support from HSE personnel, shall ensure adequate fire fighting means are at the storage location:

- Portable fire extinguishers
- Foam drums and injector, protected from the sun/heat (for the bulk storage of combustible and flammable liquids)
- Water in sufficient quantity (for all):
    - Fire water needs for bulk storage of flammable or combustible liquids (diesel):

      Fire Fighting means, dedicated and on stand-by at vicinity, shall be at least 2 portable fire extinguishers 6 kgs ABC powder + 1 fire extinguisher 50 liters foam on wheel if storage capacity is less than 9m3. If more than 9m3, then in addition must be implemented a fire water supply such as to fight a fire during 2 hours with a minimum of 2 water lines and branches fed by 120 liters/min together (i.e. total minimum fire water capacity of 15 m3), with a minimum pressure of 2 bars at the worst point.

      For diesel storage above 90m3 together (i.e. 15m3 x6 vessels in line), a Technical Fire&Safety Specialist shall design and submit the study to Fire Services

      *Note: the above paragraph complies as a minimum with D.M. 13/07/11 and Circular MI.SA 31/78*

- **Spillages**

Work Supervision, with support from HSE personnel, shall ensure adequate spill prevention means are at the storage and workplace locations:

- Absorbents (spill kits are available in the market)
- Sand drum, shovel and bucket, etc.



*Spill response means available on site or at vicinity on request*

### 6.1.7. Monitoring: audit and inspection

Periodic audits and/or inspections shall be planned and performed to check compliance with and effectiveness of the entire above requirements, both in documentation/management and practices

⇨ **See *Appendix 7.2***

In addition, the effectiveness of protective devices must be checked periodically.

Site HSE personnel is in charge of implementing and performing the monitoring system.

## 6.2. Health

### 6.2.1. Occupational Exposure

Occupational exposure may be active, if directly linked to the job performed by the person exposed, or passive if linked to contamination of the environment where the person works. An activity may be a source of both active and passive exposure at the same time. Analysis of the processes and operations must identify the “normal” work situations in which personnel risk being exposed through inhalation, ingestion or contact, whether continuously, intermittently or occasionally. The exposure must be characterised and quantified by Line Management + Occupational Physician and HSE (mode and type of exposure, concentration, quantity, duration, frequency). The results of the exposure measurements must be compared with the *Occupational Exposure Threshold Limit Values* (TLV) to determine whether measures to reduce exposure levels should be taken. When exposure is less than 10% of the TLV-TWA 8h, the risk is considered low/insignificant. In the absence of more stringent national legislation, the TLV-TWA values are those indicated in Annex 2. (cf. GM EP HI 065).

### 6.2.2. Risk Assessment

The chemicals exposure risk assessment for the worker’s health (or for the job position or for the group of similar positions), the risk assessment acceptance by the hierarchy and the conditions for this acceptance are formalized in a report, in line with PR-2-HSE-06-01.

This health exposure register contains:

- information on identifying the hazards of the products present, used and generated by the activity;
- potential exposure conditions (activities, duration, frequency, quantity, concentration);
- results of the potential risk and residual risk assessment (after implementation of risk reduction measures);
- results of measurements, if any;
- preventive measures implemented (general instructions on safety, procedures, protective devices, etc.).

Such Health Risk Assessment is done by Line Management + Occupational Physician and HSE.
The document, which is not specific to chemical risks, will be kept for legal purposes for 50 years.
It may consist of a risk assessment document prepared pursuant to Leg. Dec. 81/2008 or of a specific document prepared to satisfy the requirements of the present procedure.

### 6.2.3. Personal Protective Equipment

If there is a risk of exposure above the Exposure Limit Values (TLV), the use of specific PPE is mandatory.Refer to the MSDS. The effective and efficient use of PPE must be constantly monitored.
Work Supervisors are responsible of ensuring their team members are wearing the adequate PPE.
PPE are the final option for protecting personnel when all other means of protection (especially collective protections) are inadequate.

## 6.3. Safety

### 6.3.1. Incompatibility of chemicals for storage

Some chemicals shall not be stored together, because they may be incompatible.

***Refer to Appendix 7.1.***

### 6.3.2. Ventilation

Chemicals storage and workplaces shall be properly ventilated and cooled, to avoid accidental accumulation of hazardous material (explosive/flammable, toxic, asphyxiating, etc.) or overheating leading to product instability.
Cooling means can be, for example, Air Conditioning unit, installed by a competent Electrician.

- Compressed gases

In addition to the procedure "Welding/cutting and use of industrial gas" IT-TPR-GE-SET-000011, **it is prohibited to store compressed gases in confined spaces like containers, cabins, etc.**

### 6.3.3. Combustibles and flammables

- **Storage of hydrocarbons is prohibited in confined spaces (containers, portacabins, etc.).**

- Bulk storage of combustible and flammable liquids (example: diesel), shall be done in accordance with regulations, and particularly taking into consideration the fire/explosion risk generated by:
  - discharge of static electricity during loading/unloading operations
  - hot works at vicinity
  - lightning
  - heat/temperature
  - etc.

- Electrical hazards

  Ensure earthing and equipotentiality of all bulk storage, checked by a 3rd party as part of the electrical installations.
  Also, for a safe loading/unloading, an additional earthing sytem shall be installed, on stand-by. For example: crocodile handle and cable connected to existing earthing system.
- Hot works at vicinity

  Hot works at vicinity of combustibles and flammables are prohibited, except if authorized through Risk Assessment and Permit To Work.

- A specific loading/unloading site instruction shall be created and approved by the RSES.

*Note: fire fighting is treated in 6.1.6. Emergency Response*

### 6.3.4. Transportation out of site / ADR Regulation

For Hazardous Material transportation, comply with ADR regulation (European **A**greement concerning the International Carriage of **D**angerous Goods by **R**oad).

## 6.4. Environment

### 6.4.1. Storage of chemicals

**A dedicated storage area shall be designed as a minimum as follows:**

- easily accessible and with enough space to transport / offload / emergency vehicles
- protected from risks of mechanical shocks by vehicles
- free of any other hazard, or area where people are located
- properly segregated (see 6.3.1.)
- a procedure to manage and store chemicals shall be issued by Contractors

**Containments for any chemical hazardous for the environment must be designed and built so that to collect potential spills** and avoid accidental release to the environment. They can be:

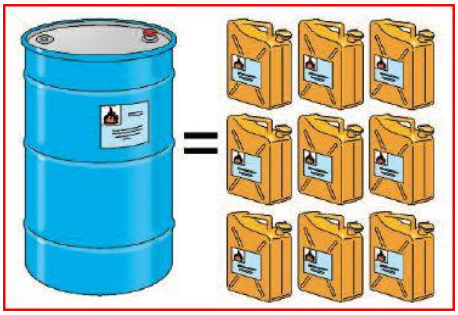
- Built-in structures from design (example: metallic containment skid for diesel storage tank)
- Structures designed separately from the chemical container (example: mobile containment specific to 1 type of product, concrete bund wall for diesel storage tank).
  In the case of bund wall for diesel storage tank or similar, containment volume shall be designed so that:
  - To contain 100% of the capacity of the vessel
  - A pit is built at the lowest level of the containment, with the possibility of locate a submersible pump to remove the release product and/or water.
  - The material used to ensure bund wall is chemical-proof, which means it will not let the chemical crossing it and being released outside the containment
- **Comply with regulations regarding storage administrative authorizations and safety/environment requirements.**

*Examples of chemical containments to avoid spillage to the environment*

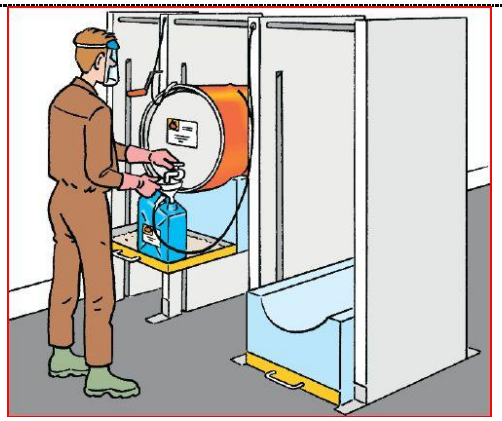
### 6.4.2. Transfers

Transfer of chemicals is, in this chapter, defined as reconditioning: emptying one drum to fill another one.
Transfers shall:

- Be performed in a suitable area, secured and under containment
- Be labeled accordingly, when from native containment to another one
- Preferably use gravity to pump



*Labeling of transferred products*



*Example of suitable transfer system, by gravity*

### 6.4.3. Hazardous Waste

A procedure shall be implemented to ensure traceability of the waste to its final destination in accordance with current legislation: see Site Waste Management Plan IT-TPR-GE-SET-000002.
This labelling must comply with legislation on the transport and disposal of hazardous waste.

# 7. APPENDIX

## 7.1. Compatibility matrix for storage of chemicals

| | Explosives | Flammables | Oxydizing | Compressed Gases | Corrosive (metals & skin) | Acute Toxicity | Skin Irritation | CMR (1), STOT (2), Aspiration Hazard | Hazardous for the Environment |
|---|---|---|---|---|---|---|---|---|---|
| GHS01 | ○ | — | — | — | — | — | + | — | — |
| GHS02 | — | + | — | — | — | — | + | — | — |
| GHS03 | — | — | + | ○ | — | — | — | — | — |
| GHS04 | — | — | ○ | + | ○ | — | — | — | — |
| GHS05 | — | — | — | ○ | ○ | ○ | ○ | ○ | ○ |
| GHS06 | — | — | — | — | ○ | + | + | + | + |
| GHS07 | + | + | — | — | ○ | + | + | + | + |
| GHS08 | — | — | — | — | ○ | + | + | + | + |
| GHS09 | — | — | — | — | ○ | + | + | + | + |

*1) Carcinogenic, germ cell mutagenic, toxic to reproduction 2) specific target organ toxicity*
*GHS: Globally Harmonized System of Classification and Labeling of Chemicals (UN internationally agreed)*

***Legend:***

| | |
|---|---|
| + | *compatible for storage* |
| — | *DO NOT STORE TOGETHER* |
| ○ | *compatible for storage under certain conditions* |

Hazards Pictograms as per Regulation (EC) No 1272/2008:
CLP Regulation (Classification, Labelling and Packaging of chemicals substances and mixtures)

## 7.2. Audit/Inspection form

TOTAL — TEMPA ROSSA

| Date | Contractor audited |
|---|---|
| Location | |

Participants (Name + Company + Position):

| # | Item to check | C | NC | NA | Comments |
|---|---|---|---|---|---|
| | **HSE common part** | | | | |
| | Hazardous Substances Identification - Inventory/Register (list + MSDS) available: | | | | |
| 1 | at the Medical Centre on site | | | | |
| 2 | at the Site HSE Office | | | | |
| 3 | at the workplace (attached to PTW) | | | | PTW #: |
| | Hazardous Substances Identification - Labeling | | | | |
| 4 | Labels with product name + hazards are on all packagings (including products transferred from native packaging) | | | | |
| 5 | Hazard Pictograms are compliant with LCP Regulation (see attached) | | | | |
| | Risk Assessment | | | | |
| 6 | From the PTW inspected, the JRA is capturing Hazardous Substances (if relevant) | | | | JRA #: |
| | Risk Control | | | | |
| 7 | PPE are worn as per relevant MSDS, and in proper condition | | | | PTW #: |
| 8 | Training & Awareness: Personnel is aware of the hazardous substances exposed to and precautions to be taken *- team from same PTW -* | | | | |
| 9 | HSE department is maintaining updated the training & awareness register | | | | |
| | Emergency Response | | | | |
| 10 | Emergency Response Teams are trained regularly on scenarii | | | | |
| 11 | Eye wash stations/safety showers available and operational at the relevant locations | | | | |
| 12 | Spill kits available and operational at the relevant locations | | | | |
| | **Health-specific** | | | | |
| 13 | Occupational Physician and/or Site Medical Center keeps register of personnel's health exposure, updated | | | | |
| | **Safety-specific** | | | | |
| 14 | Storage incompatibility respected | | | | |
| 15 | Ventilation and cooling adequate and operational (when needed) | | | | |
| 16 | Compressed gases are not stored in confined spaces (containers, etc.) | | | | |
| 17 | Combustibles & flammables not stored in confined spaces (containers, etc.) | | | | |
| 18 | Bulk storage of combustible & flammable liquids: | | | | |
| 19 | proper earthing and equipotentiality | | | | |
| 20 | loading/unloading (example: diesel): stand-by earthing of the truck available and operational | | | | |
| 21 | no hot works at vicinity (except authorized by and compliant with PTW) | | | | |
| 22 | loading/unloading instruction existing and on use *- displayed at unloading point -* | | | | |
| | **Environment-specific** | | | | |
| 23 | chemicals are located above containments to avoid spills | | | | |
| | **TOTAL** | 0 | 0 | 0 | |
| | **%** | 0 | 0 | 0 | |

**CONCLUSION**

Name & Signature of Participants

# 8. DISTRIBUTION

General distribution through the CMS of the Total E&P Italia intranet web site.