

HAZARDOUS SUBSTANCE AND CHEMICAL CONTROLS


TAKREER Project No. : 5578

TAKREER

Ruwais Refinery Expansion Project

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Rev	Date	Description	Orig by	Chk'd by	App By	COMPANY App
0	05/01/13	For Construction	G.T.W.	Y. H YANG	I.H.Hur	
C	20/12/12	For Approval	KO Y. D	Y. H YANG	I.H.Hur	
B	4/12/12	For Approval	KO Y. D	Y. H YANG	I.H.Hur	
A	22/09/12	Issue for Review and Comments	KO Y. D	Y. H YANG	I.H.Hur	

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Revision List
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Rev. No.	Date	Description	Page no.	Remark
A	22. Sep. 12	Originally issued for Review and Comment	All	
B	4. Dec. 12	Comments Incorporated	All	
C	20. Dec. 12	Comments Incorporated	All	
0	05. Jan. 13	For Construction		




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AGREEMENT

By EPC CONTRACTORS Seal and EPC CONTRACTORS representative signature hereunder attached, it is recognized and covenanted by the Parties hereunder that a formal Agreement has been made regarding the works as described in this Common Water Flushing Procedure. This Agreement has been mutually signed and agreed


	EPC 1	EPC 2	EPC 3	EPC 4	EPC 6	EPC 7
Name						
Position						
Signature						
Date						



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1. Purpose

This Procedure describes RRE PROJECT requirements for managing hazardous substances and chemicals associated with RRE facilities, activities, products and services.

The purpose of this Procedure is to provide a focus on the management of hazardous substances and chemicals in RRE and to provide users with general requirements for managing hazardous substances and chemicals.

This Procedure shall be used in conjunction with other procedures (this project and each individual EPC has procedures for each discipline of the construction phase Civils, Steel erection, Piping, Concreting, precommissioning and commissioning to name a few, therefore these procedures will be used in conjunction with this procedure) refers to that specifically refer to HSE hazardous substances and chemicals.

2. Scope


This Procedure shall be applicable to all RRE PROJECT employees, sub-contractors, facilities, activities, services and products without exception.

The procedure will be applicable during commissioning.

3. Definitions

Hazard	The <i>potential</i> to cause harm , including ill health and injury, damage to property, products or the environment; production losses or increased liabilities.
Hazardous Substance	A substance with the potential to harm people and the environment, cause damage or loss of assets, and to adversely impact RRE PROJECT and COMPANY reputation.
Chemical Agent	A chemical substance, whether pure or in mixture with other substances.
Biological Agent	A micro-organism, cell culture or human endoparasite that may cause infection, allergy, toxic effect or any other adverse health effect.
Substance Hazardous to Health	Any solid, liquid, vapour, gas or infectious agent used or produced in the workplace which may cause a harmful effect to the human body (except by physical means alone) either in the short or long term.
Carcinogen	A substance either known to cause cancer or classified as having a high probability of causing cancer, that is classified by IARC as Category 1 or Category 2.
Mutagen	Chemical agent that causes cell mutation.



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4. Background

This Procedure covers the requirements for the management of hazardous substances and chemicals associated with RRE facilities, activities, products and services. This Procedure contains a number of procedures relating to hazardous substances, including:

- Hazardous Substance and Chemical Risk Management.
- Hazardous Substance and Chemical Classification.
- Hazardous Substance and Chemical Inventorisation.
- Hazardous Substance and Chemical Procurement.
- HSE Information from Suppliers.
- HSE Information Available to Personnel.
- Lifecycle Tracking.

5. Responsibility

5.1 Commissioning Manager


- Is responsible for ensuring that hazardous substances and chemicals in their area of application (involving sub-contractor activities on site) are managed in accordance with the requirements of this Procedure.
- Shall ensure that competent personnel are employed to manage the risks associated with hazardous substances and chemicals. Sufficient budgets shall be available to manage this risk to an acceptable or ALARP level.
- That a suitably qualified an engineer is provide in order to provide guidance and assistance on an as needs basis
- Will be responsible for reviewing, updating and maintaining the management of hazardous substances and chemicals.
- Ensure through routine checks and inspections ensure that hazardous substances and chemicals used on RRE managed according to the findings of an HSE Risk Assessment
- Provide HSE information as part of hazardous substance procurement.
- Collate HSE information on hazardous substances and chemicals to be recorded the in the Material Safety Data Sheets (MSDS). For information to the hazardous substances the relevant MSDS shall be posted at the place being used,stored or transported.
- Has responsibility for ensuring that the requirements of this procedure are reflected in the documents for which they are responsible.

5.2 HSE Manager

The HSE Manager shall through routine checks and inspections ensure that hazardous substances and chemicals are well kept and managed in the area according to the procedures with items as below:

- Identified and classified
- Inventoried
- Managed according to the findings of an HSE Risk Assessment
- Recorded, as appropriate.
- Reported, as appropriate.



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- Ensure that employees and contractors who may work with hazardous substances and chemicals are given suitable and sufficient information on the HSE risks and the control measures required to manage risk .

5.3 Area Supervisor

First Line Supervisors shall be responsible for ensuring that a suitable Task Risk Assessment and toolbox discussion prior to work has been performed for all activities involving hazardous substances and chemicals.

5.4 Sub-contractor

Sub-contractors shall be responsible for ensuring that hazardous substances and chemicals used in the course of carrying out their contractual requirements are managed in accordance with the requirements of this Procedure and reported, when applicable, to the sub- contract Holder

6. Method

6.1 Hazardous Substance and Chemical Risk Management

6.1.1 Risk Assessment


In order to identify, evaluate and manage hazardous substances and chemicals in RRE, a risk assessment shall be carried out according to the requirements of :

- Chapter 4 HSE Risk Evaluation and Management.
- HSE-CP25 HSE Risk Assessment.
- ADNOC COPV3-04 Occupational Health Risk Management – Chemical and Biological Agents.
- ADNOC COPV4-01 Framework of Occupational and Operational Safety Risk Management.

When carrying out a risk assessment:

- Identify hazardous substances and chemicals.
- Decide what might be harmed, and how.
- Evaluate the risks arising from the hazardous substance and decide whether the precautions are adequate or more shall be taken.
- Review your assessment from time to time and revise it if necessary.



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6.1.2 Risk Management

RRE PROJECT shall utilise the findings of risk assessments as the basis to prioritise and manage significant HSE risks from hazardous substances and chemicals according to the requirements of ADNOC HSE Risk Management Guidelines.

Hazardous substance risk management strategies and plans shall be developed in order to eliminate, prevent and control risk management hierarchy as assessed by CONTRACTOR.

6.1.3 Reports and Records

In accordance RRE PROJECT requirements full records shall be kept and maintained by the HSE Manager for all risk assessments performed and shall also include a record of their review and update.

The record will be reported to the COMPANY if required.

Question 7

We thought this document was straight forward and refers to Hazardous Substances and Chemicals, at the beginning and on each page. This particular section is about risk management of Hazardous Substances and Chemicals.

These risks are assessed.

By suitably qualified staff.

When ever the need arises and when chemicals are introduced to the project or being used, is there another time you may have in mind when we should do this.

It will be reported electronically.

They are recorded, that is the risk assessment. It is recorded in order to have reference to the risk it may impose on the people and the project as a whole. We then can take mitigating measures to ensure that the risk is reduced to alarp.

6.2 Procurement of Hazardous Substances and Chemicals


Before any chemical, which may be potentially hazardous, is procured by RRE, it shall be subject to a review of its suitability for use in the context of the HSE risks under normal conditions of use and emergency conditions.

The Commissioning Manager shall be responsible for the review, which shall include consideration of current MSDS information and any other relevant data, including quantity of material to be used, potential exposure routes and risks. The review shall be carried out by a suitably qualified and competent person, such as an Engineer or Occupational Hygienist.

When forming the judgement on the approval of a hazardous substance the following questions shall be asked:

- How necessary is the product (i.e. does it needs to be used at all)?
- Is it possible to substitute the product for a suitable alternative that is less hazardous?
- If it is found that it is impossible to successfully eliminate or substitute the hazardous substance, then it is important to consider the way in which exposure to it will be controlled.



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These processes can be facilitated by sourcing products from reputable suppliers who show firm commitment to HSE matters. With regards to the following indicators :

- Willingness to provide and discuss HSE information.
- Implementation of active Product Stewardship.
- Participation in industry initiatives such as Responsible Care programmes.
- Certification to national or international quality standards, e.g. ISO 14001.

6.3 Hazardous Substance and Chemical Classification

Chemical hazard classification is in the process of being globally harmonised. So far as this Procedure is concerned, any substance listed under the following shall be considered a hazardous substance:

- Any substance classified under the table of categories listed in Appendix A of this Procedure. This list is derived from the UK Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3).
 - Any substance classified in the health hazard categories of the ILO Working Group on Hazard Communication (International Labour Organisation-Proposed Harmonisation of Chemical Hazard Communication in the Globally Harmonised System).
 - Any substance that has been assigned a relevant Occupational Exposure Limit by UK HSE (UK), OSHA (US), NIOSH (US) or a TLV (Threshold Limit Value) by ACGIH (US).
 - Any dust in sufficient concentration (that is, more than 10 mg/m³ total inhalable dust).
 - Any other substance that can lead to health damage (substances such as protein-based sensitizers fit into this category).
 - United Nations Classifications (see COMPANY,s HSE-CP12 Waste Management).
- Commissioning Manager (for non refinery Divisions) shall identify and classify hazardous (or dangerous) substances according to definitions provided in Appendix A.


6.4 Hazardous Substance and Chemical Inventorisation

Commissioning Manager shall prepare inventories of all hazardous substances and chemicals identified in Section 6.3. Hazardous substance inventories shall be calculated on the basis of the **maximum** quantity (in kg) that may be present at any one time and will include consideration of hazardous substance inventories (including preparations, mixtures and wastes) from process vessels, flow lines, pipelines, storage tanks, drums, containers, bags and cylinders. Commissioning Manager shall forward all hazardous substance inventories to HSE Manager.

6.5 HSE Information from Suppliers.

RRE PROJECT shall ensure that suppliers of all hazardous and chemical substances provide a level of information that is commensurate to protect the health and safety of RRE (and other) personnel and the environment. Substance information from the supplier shall be transmitted primarily through the MSDS.



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MSDS shall be compliant with either European or ANSI standards (see Chemicals Hazard Information and Packaging for Supply Regulations 2002 (CHIP 3), ANSI Standard Z400.1-1998. Hazardous Industrial Chemicals – MSDS – Preparation) or their equivalent.

MSDS provision and retention is of vital importance for HSE reasons. RRE PROJECT shall ensure that a MSDS is obtained for every hazardous substance used at site and that an up-to-date file of relevant MSDS information is kept at a central location.

RRE PROJECT shall create a system to manage this information which shall be kept at all sites. For substances currently in use, this system shall have a full and complete set of information for all of the substances used. For substances to be used in future, an MSDS shall be obtained prior to supply.

All hazardous substances and chemicals shall be labelled in accordance with Appendix B requirements directly on their container or vessel.

6.6 HSE Information Available to Personnel

HSE Manager shall ensure that personnel who may work with hazardous substances and chemicals are given suitable and sufficient information on the HSE risks and the control measures required to manage risk.

6.7 Lifecycle Tracking

Commissioning Manager shall be responsible for ensuring that hazardous substances and chemicals are tracked throughout their lifecycle, including:

- Procurement.
- Use.
- Expiry.
- Reduce/Reuse/Recycle (COMPANY HSE-CP23 Waste Management).
- Treatment and Disposal (COMPANY HSE-CP23 Waste Management).
-

6.8 Performance Monitoring

Monitoring shall be undertaken by the Commission Team, where it is required to:


- Assess HSE risks.
- Evaluate the effectiveness of risk management measures.
- Choose appropriate Personal Protective Equipment (PPE).
- Ensure compliance with regulatory/company standards.

Monitoring hazardous substances and chemicals shall be carried out as determined by the outcome of the risk assessment. Monitoring shall be performed for routine or historical reasons or in direct response to specific concerns. The risk assessment shall be the primary method by which monitoring is recommended.

In order to monitor performance in a suitable manner, information shall be gathered for each hazardous substance of interest and shall consider:

- Who is exposed.



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- What is their exposure level.
- What are the related circumstances (work practices, existing controls, etc.).
- For further details consult the COMPANY HSE-CP07 Occupational Health Hazards.

6.9 Records

Commissioning Manager shall prepare MSDS (refer to COMPANY HSE-CP07 Occupational Health Hazards) for all hazardous substances and chemicals according to the CHIP 3 Regulations (ADNOC COPV3-04 Occupational Health Risk Management – Chemical and Biological Agents).

Commissioning Manager shall utilise a centralised system to record and manage hazardous substances and chemicals covering their cradle to grave lifecycle at all facilities.

MSDS shall serve as the basis for performing HSE risk assessment and for developing the Hazards and Effects Register required (Chapter 4 HSE Risk Evaluation and Management).

The Records for all monitoring shall be kept and maintained by the Commissioning Manager.

Monitoring records shall contain the following information :

- When the monitoring was done and what the results were.
- What monitoring procedures were adopted, including the duration and the locations where samples were taken.
- The operations in progress at the time of monitoring and, in the case of personal samples, the names of the individuals concerned.

Records shall be readily retrievable and in an easily understood form. Records shall be kept in such a way that the results can be compared with any health records kept for health surveillance purposes.

6.10 Reports

Commissioning Manager shall submit to HSE Manager MSDS and hazardous substance inventory reports on a monthly basis, or following significant revision.

Hazardous substances and chemicals with the potential to cause a major accident shall be submit to HSE Manager.

You ask for definitions of the following which is surprising however, firstly there is no mention of CONTRACTOR in this section.


A definition of

CONTRACTOR would be,..... it is any of the seven EPC's.

Commissioning Manager..... heads up the commissioning team for each package.

HSE Manageradvises Project Directors on matters of safety and health.



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7. Performance Measures

Compliance with this Procedure shall be monitored regularly by the HSE Manager and the number of near misses, incidents and accidents associated with activities involved with hazardous substances and chemicals shall be recorded and all efforts made to eliminate, prevent and control further occurrence of these. A culture of no blame reporting of near misses and accidents shall be implemented, root causes identified and weaknesses in the system reviewed and revised to eliminate further incidents.


8. References

- ADNOC COPV3-04 Occupational Health Risk Management – Chemical and Biological Agents.
- ADNOC COPV3-08 Health Risk Assessment
- ADNOC COPV4-01 Framework of Occupational and Operational Safety Risk Management
- HSE-CP02 Fire and Explosion Hazards



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Appendix A Classification of Chemical Hazardous Substances

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Classifications of Chemicals Hazards


Abbreviation	Hazard	Description of Hazard
Physicochemical		
E	Explosive	Chemicals that explode.
O	Oxidizing	Chemicals that react exothermically with other chemicals.
F+	Extremely flammable	Chemicals that have an extremely low flash point and boiling point, and gases that catch fire in contact with air.
F	Highly flammable	Chemicals that may catch fire in contact with air, only need brief contact with an ignition source, have a very low flash point or evolve highly flammable gases in contact with water.
Health		
T+	Very toxic	Chemicals that at very low levels cause damage to health.
T	Toxic	Chemicals that at low levels cause damage to health.
Carc Cat 1	Category 1 carcinogens	Chemicals that may cause cancer or increase its incidence.
Carc Cat 2	Category 2 carcinogens	
Carc Cat 3	Category 3 carcinogens	
Muta Cat 1	Category 1 mutagens	Chemicals that induce heritable genetic defects or increase their incidence.
Muta Cat 2	Category 2 mutagens	
Muta Cat 3	Category 3 mutagens	
Repr Cat 1	Category 1 reproductive toxins	Chemicals that produce or increase the incidence of non-heritable effects in progeny and/or an impairment in reproductive functions or capacity.
Repr Cat 2	Category 2 reproductive toxins	
Repr Cat 3	Category 3 reproductive toxins	
Xn	Harmful	Chemicals that may cause damage to health.
C	Corrosive	Chemicals that may destroy living tissue on contact.
Xi	Irritant	Chemicals that may cause inflammation to the skin or other mucous membranes.
Environmental		
N	Dangerous for the environment	Chemicals that may present an immediate or delayed danger to one or more components of the environment



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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
R1	Explosive when dry
R2	Risk of explosion by shock, friction, fire or other sources of ignition
R3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
R4	Forms very sensitive explosive metallic compounds
R5	Heating may cause an explosion
R6	Explosive with or without contact with air
R7	May cause fire
R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
R10	Flammable
R11	Highly flammable
R12	Extremely flammable
R14	Reacts violently with water
R14/15	Reacts violently with water, liberating extremely flammable gases
R15	Contact with water liberates extremely flammable gases
R15/29	Contact with water liberates toxic, extremely flammable gases
R16	Explosive when mixed with oxidising substances
R17	Spontaneously flammable in air
R18	In use, may form flammable/explosive vapour-air mixture
R19	May form explosive peroxides
R20	Harmful by inhalation
R20/21	Harmful by inhalation and in contact with skin
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R20/22	Harmful by inhalation and if swallowed
R21	Harmful in contact with skin
R21/22	Harmful in contact with skin and if swallowed
R22	Harmful if swallowed
R23	Toxic by inhalation
R23/24	Toxic by inhalation and in contact with skin
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R23/25	Toxic by inhalation and if swallowed
R24	Toxic in contact with skin
R24/25	Toxic in contact with skin and if swallowed




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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
R25	Toxic if swallowed
R26	Very toxic by inhalation
R26/27	Very toxic by inhalation and in contact with skin
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R26/28	Very toxic by inhalation and if swallowed
R27	Very toxic in contact with skin
R27/28	Very toxic in contact with skin and if swallowed
R28	Very toxic if swallowed
R30	Can become highly flammable in use
R31	Contact with acids liberates toxic gas
R32	Contact with acids liberates very toxic gas
R33	Danger of cumulative effects
R34	Causes burns
R35	Causes severe burns
R36	Irritating to eyes
R36/37	Irritating to eyes and respiratory system
R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R37	Irritating to respiratory system
R37/38	Irritating to respiratory system and skin
R38	Irritating to skin
R39	Danger of very serious irreversible effects
R39/23	Toxic: danger of very serious irreversible effects through inhalation
R39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/24	Toxic: danger of very serious irreversible effects in contact with skin
R39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/25	Toxic: danger of very serious irreversible effects if swallowed
R39/26	Very Toxic: danger of very serious irreversible effects through inhalation
R39/26/27	Very Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/26/27/28	Very Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/26/28	Very Toxic: danger of very serious irreversible effects through inhalation and if swallowed




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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
R39/27	Very Toxic: danger of very serious irreversible effects in contact with skin
R39/27/28	Very Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/28	Very Toxic: danger of very serious irreversible effects if swallowed
R40	Limited evidence of a carcinogenic effect
R40/20	Harmful: possible risk of irreversible effects through inhalation
R40/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin
R40/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed
R40/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
R40/21	Harmful: possible risk of irreversible effects in contact with skin
R40/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
R40/22	Harmful: possible risk of irreversible effects if swallowed
R41	Risk of serious damage to eyes
R42	May cause sensitisation by inhalation
R43	May cause sensitisation by skin contact
R42/43	May cause sensitisation by inhalation and skin contact
R44	Risk of explosion if heated under confinement
R45	May cause cancer
R46	May cause heritable genetic damage
R48	Danger of serious damage to health by prolonged exposure
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed


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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R49	May cause cancer by inhalation
R50	Very toxic to aquatic organisms
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51	Toxic to aquatic organisms
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52	Harmful to aquatic organisms
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R53	May cause long-term adverse effects in the aquatic environment
R54	Toxic to flora
R55	Toxic to fauna
R56	Toxic to soil organisms
R57	Toxic to bees
R58	May cause long-term adverse effects in the environment
R59	Dangerous for the ozone layer
R60	May impair fertility
R61	May cause harm to the unborn child
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R64	May cause harm to breast-fed babies
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness
R68	Possible risk of irreversible effects
S1	Keep locked up
S(1/2)	Keep locked up and out of the reach of children
S2	Keep out of the reach of children
S3	Keep in a cool place
S3/7	Keep container tightly closed in a cool place




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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
S3/7/9	Keep container tightly closed in a cool, well-ventilated place
S3/9/14	Keep in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
S3/9/14/49	Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
S3/9/49	Keep only in the original container in a cool, well-ventilated place
S3/14	Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer)
S4	Keep away from living quarters
S5	Keep contents under ... (appropriate liquid to be specified by the manufacturer)
S6	Keep under ... (inert gas to be specified by the manufacturer)
S7	Keep container tightly closed
S7/8	Keep container tightly closed and dry
S7/9	Keep container tightly closed and in a well-ventilated place
S7/47	Keep container tightly closed and at temperature not exceeding ... °C (to be specified by the manufacturer)
S8	Keep container dry
S9	Keep container in a well-ventilated place
S12	Do not keep the container sealed
S13	Keep away from food, drink and animal feedingstuffs
S14	Keep away from ... (incompatible materials to be indicated by the manufacturer)
S15	Keep away from heat
S16	Keep away from sources of ignition - No smoking
S17	Keep away from combustible material
S18	Handle and open container with care
S20	When using do not eat or drink
S20/21	When using do not eat, drink or smoke
S21	When using do not smoke
S22	Do not breathe dust
S23	Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)
S24	Avoid contact with skin
S24/25	Avoid contact with skin and eyes
S25	Avoid contact with eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S27	Take off immediately all contaminated clothing

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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
S27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer)
S28	After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer)
S29	Do not empty into drains
S29/35	Do not empty into drains; dispose of this material and its container in a safe way
S29/56	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
S30	Never add water to this product
S33	Take precautionary measures against static discharges
S35	This material and its container must be disposed of in a safe way
S36	Wear suitable protective clothing
S36/37	Wear suitable protective clothing and gloves
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S36/39	Wear suitable protective clothing and eye/face protection
S37	Wear suitable gloves
S37/39	Wear suitable gloves and eye/face protection
S38	In case of insufficient ventilation wear suitable respiratory equipment
S39	Wear eye/face protection
S40	To clean the floor and all objects contaminated by this material use ... (to be specified by the manufacturer)
S41	In case of fire and/or explosion do not breathe fumes
S42	During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer)
S43	In case of fire use ... (indicate in the space the precise type of fire-fighting equipment. If water increases the risk add - Never use water)
S45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
S46	If swallowed, seek medical advice immediately and show this container or label
S47	Keep at temperature not exceeding ... °C (to be specified by the manufacturer)
S47/49	Keep only in the original container at temperature not exceeding ... °C (to be specified by the manufacturer)
S48	Keep wet with ... (appropriate material to be specified by the manufacturer)
S49	Keep only in the original container
S50	Do not mix with ... (to be specified by the manufacturer)
S51	Use only in well-ventilated areas
S52	Not recommended for interior use on large surface areas


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Risk and Safety Phrases (UK Chemicals Hazard Information and Packing for Supply Regulations)	
S53	Avoid exposure - obtain special instructions before use
S56	Dispose of this material and its container at hazardous or special waste collection point
S57	Use appropriate containment to avoid environmental contamination
S59	Refer to manufacturer/supplier for information on recovery/recycling
S60	This material and its container must be disposed of as hazardous waste
S61	Avoid release to the environment. Refer to special instructions/safety data sheet
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label
S63	In case of accident by inhalation: remove casualty to fresh air and keep at rest
S64	If swallowed, rinse mouth with water (only if the person is conscious)









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Appendix B Labelling of Chemical Hazardous Substances





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UK CHIP 3 Hazardous Substance Labels

Category	Description	SYMBOL
VERY TOXIC	Substances and preparations, which in very low quantities cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.	
TOXIC	Substances and preparations, which in low quantities cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.	
HARMFUL	Substances and preparations, which may cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.	
OXIDISING	Substances and preparations, which give rise to a highly exothermic reaction in contact with other substances, particularly flammable substances.	
CORROSIVE	Substances and preparations, which may on contact with living tissues, destroy them.	
IRRITANT	Non-corrosive substances and preparations, which through immediate, prolonged or repeated contact with the skin or mucous membrane, may cause inflammation.	
EXPLOSIVE	Solid, liquid, pasty or gelatinous substances and preparations which may react exothermically without atmospheric oxygen thereby quickly evolving gases, and which under defined test conditions detonate, quickly deflagrate or upon heating explode when partially confined.	
FLAMMABLE	Liquid substances and preparations having a low flash point.	

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UK CHIP 3 Hazardous Substance Labels

Category	Description	SYMBOL
HIGHLY FLAMMABLE	<ul style="list-style-type: none"> substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition. liquid substances and preparations having a very low flash point, or substances and preparations which, in contact with water or damp air, evolve extremely flammable gases in dangerous quantities. 	
EXTREMELY FLAMMABLE	Liquid substances and preparations having an extremely low flash point and a low boiling point and gaseous substances and preparations which are flammable in contact with air at ambient temperature and pressure.	
DANGEROUS FOR THE ENVIRONMENT	Substances and preparations which, were they to enter into the environment, would present or might present an immediate or delayed danger for one or more components of the environment.	