

This safety data sheet complies with the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008, (EU) No. 453/2010  
Version 1.1 Revision date 22-02-2021  
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## 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

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### 1.1 Product Identifier

Product name: NEOMERIS ORP buffer solution 650mV ( $\pm 5$ mV @25°C)  
Product number(s): 70ml, 250ml, 500ml  
890713, 890705, 890776  
Supplier: Gebrüder Heyl Vertriebsgesellschaft für innovative Wasseraufbereitung mbH  
REACH Number: A registration number is not available for this substance as the substance or use, except for registration for the annual volume does not require a registration or the registration is equipped with a later registration deadline.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Use as laboratory reagent, Calibration solution

### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Gebrüder Heyl Vertriebsgesellschaft für innovative Wasseraufbereitung mbH  
Max-Planck-Str. 16  
31135 Hildesheim  
Deutschland  
Telephone: +49 (0)5121-76090  
E-mail address: [vertrieb@heylnemeris.de](mailto:vertrieb@heylnemeris.de)

### 1.4 Emergency telephone number

Emergency telephone number: GIZ-Nord Poisons Centre  
+49 (0)551-19240 Solely intended to inform professional caregivers in acute poisoning

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## 2: HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.

Any additional information concerning the risks for health and/or the environment are given in section 11 and 12 of these sheets.

Hazard classification and indication:

Skin corrosion, category 1B H314 Causes severe skin burns and eye damage.  
Serious eye damage, category 1 H318 Causes serious eye damage.

### 2.2 Label elements according to Directive (EC) Nr 1272/2008

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal word:

Danger

#### Hazard Statements

H314: Causes severe skin burns and eye damage.

#### Precautionary statements

P260: Do not breathe dust/fumes/gas/mist/vapors/spray.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER/doctor/...

P264: Wash ... thoroughly after handling.

#### Contains:

HYDROCHLORIC ACID  
FERRIC CHLORIDE, SOLUTION

### 2.3 Other hazards

Based on available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

Component	EC-No.	CAS-No.	Weight %	CLP Classification – Regulation (EC No. 1272/2008)
Ferric Chloride, solution	231-729-4	7705-08-0	3 – 5%	Acute Tox. 4 H302 Skin Corr. 1B H314 Eye Dam. 1 H318 Aquatic Chronic 3 H412
Hydrochloric acid	231-595-7	7647-01-0	0,5 – 1%	Met. Corr. 1 H290 Skin Corr. 1B H314 Eye Dam. 1 H318 STOT SE 3 H335 Classification note according to Annex VI to the CVLP Regulation: B

For the full text of the phrases mentioned in this Section, see Section 16.

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## 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

<b>General Advice:</b>	Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. Show this safety data sheet to the doctor in attendance.
<b>Inhalation:</b>	Move to fresh air. If symptoms persist, obtain medical attention.
<b>Skin Contact:</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.
<b>Eye Contact:</b>	In case of eye contact. Remove contact lenses if present. Wash immediately with plenty of water for at least 30-60 minutes. Obtain medical attention.
<b>Ingestion:</b>	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting. Obtain medical attention.
<b>Inhalation:</b>	Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

### 4.2 Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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## 5: FIREFIGHTING MEASURES

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### 5.1 Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### 5.2 Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

### 5.3 Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal firefighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

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## 6: ACCIDENTAL RELEASE MEASURES

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### 6.1 Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard. Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2 Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3 Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4 Reference to Other Sections

Any information on personal protection and disposal is given in sections 8 and 13.

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## 7: HANDLING AND STORAGE

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### 7.1 Precautions for safe handling

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapors or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

### 7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3 Specific end use(s)

Information not available

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## 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

Regulatory References:

ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2008 NIPO: 211-08-011-5
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017

EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

### FERRIC CHLORIDE, SOLUTION

#### Threshold Limit Value

Type	Country	TWA/8h mg/m <sup>3</sup>	ppm	STEL/15min mg/m <sup>3</sup>	ppm	
VLA	ESP	1				Como Fe
WEL	GBR	1		2		As Fe
TLV-ACGIH		1				

### HYDROCHLORIC ACID

#### Threshold Limit Value

Type	Country	TWA/8h mg/m <sup>3</sup>	ppm	STEL/15min mg/m <sup>3</sup>	ppm	
VLA	ESP	7.6	5	15	10	
WEL	GBR	2	1	8	5	
VLEP	ITA	8	5	15	10	
OEL	EU	8	5	15	10	
TLV-ACGIH				2.9 (C)	2 (C)	

#### Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

## 8.2 Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards. Provide an emergency shower with face and eye wash station.

#### HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

#### SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

#### RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapors of various kinds and/or gases or vapors containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odorless or its olfactory threshold is higher than the corresponding TLV-

TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance:	Yellow
b) Odor:	Characteristic
c) Odor Threshold:	No information available
d) pH:	at 20 °C pH 2
e) Melting point/freezing point:	No information available
f) Boiling Point/Range:	at approx. 100 °C
g) Flash Point:	No information available
h) Evaporation Rate:	No information available
i) Flammability (solid, gas)	No information available
j) Flammability Limit in Air:	No information available
k) Vapor pressure:	No information available
l) Vapor Density:	No information available
m) Specific Gravity:	at 20 °C approx. 1.01 g/ml
n) Water Solubility:	Soluble
o) Partition coefficient n-octanol / water:	No information available
p) Autoignition Temperature:	No information available
q) Decomposition Temperature:	No information available
r) Viscosity	No information available
s) Explosive Properties:	No information available
t) Oxidizing Properties:	No information available

### 9.2 Other safety information

No information available

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## 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

FERRIC CHLORIDE, SOLUTION

Decomposes above 160°C/320°F.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

FERRIC CHLORIDE, SOLUTION

May react dangerously with: water, strong bases, alkaline metals, allyle chloride, ethylene oxide.

HYDROCHLORIC ACID

Risk of explosion on contact with: alkaline metals, aluminum powder, hydrogen cyanide, alcohol.

### 10.4 Conditions to avoid

None in particular. However, the usual precautions used for chemical products should be respected.

### 10.5 Incompatible materials

HYDROCHLORIC ACID

Incompatible with: alkalis, organic substances, strong oxidants, metals.

### 10.6 Hazardous decomposition products

FERRIC CHLORIDE, SOLUTION

May develop: hydrochloric acid.

HYDROCHLORIC ACID

In decomposition develops: hydrochloric acid fumes.

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## 11: TOXICOLOGICAL INFORMATION

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In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

### 11.1 Information on toxicological effects

#### Metabolism, toxicokinetics, mechanism of action and other information

Information not available

#### Information on likely routes of exposure

Information not available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

#### Interactive effects

Information not available

### ACUTE TOXICITY:

LC50 (Inhalation) of the mixture: Not classified (no significant component)  
 LD50 (Oral) of the mixture: >2000 mg/kg  
 LD50 (Dermal) of the mixture: Not classified (no significant component)

### FERRIC CHLORIDE, SOLUTION

LD50 (Oral) 500 mg/kg Rat

### SKIN CORROSION / IRRITATION

Corrosive for the skin  
 Classification according to the experimental Ph value

### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

### RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

### STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## 12: ECOLOGICAL INFORMATION

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil and waterways. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation. Please take all the proper measures to reduce harmful effects on aquifers.

### 12.1 Toxicity

No information available

### 12.2 Persistence and degradability

HYDROCHLORIC ACID  
 Solubility in water > 10000 mg/l  
 Degradability: information not available



FERRIC CHLORIDE, SOLUTION  
 Solubility in water 1000 - 10000 mg/l  
 Degradability: information not available

### 12.3 Bioaccumulative potential

FERRIC CHLORIDE, SOLUTION  
 Partition coefficient: n-octanol/water -4

### 12.4 Mobility in soil

No information available

### 12.5 Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

### 12.6 Other adverse effects

No information available

## 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations. Disposal must be performed through an authorized waste management firm, in compliance with national and local regulations. Waste transportation may be subject to ADR restrictions.

#### Contaminated Packaging

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## 14: TRANSPORT INFORMATION

### 14.1 UN number

ADR / RID, IMDG, IATA: 1760

### 14.2. UN proper shipping name

ADR / RID: CORROSIVE LIQUID, N.O.S.n (hydrochloric acid)  
 IMDG: CORROSIVE LIQUID, N.O.S. (hydrochloric acid)  
 IATA: CORROSIVE LIQUID, N.O.S.n (hydrochloric acid)

### 14.3 Hazard Class

ADR/RID: 8

IMDG: 8

IATA: 8



### 14.4 Packing Group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazard

ADR/RID: -                      IMDG Marine pollutant: -                      IATA: -

### 14.6 Special Provisions

ADR / RID:	HIN - Kemler: 80	Limited Quantities: 5 L	Tunnel restriction code: (E)
	Special Provision: -		
IMDG:	EMS: F-A, S-B	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 856
	Pass.:	Maximum quantity: 5 L	Packaging instructions: 852
	Special Instructions: A3, A803		

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC-code

No information available

## 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**Seveso Category - Directive 2012/18/EC:** None

**Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006**

**Product**

Point 3

**Substances in Candidate List (Art. 59 REACH)**

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

**Substances subject to authorization (Annex XIV REACH)**

None

**Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:**

None

**Substances subject to the Rotterdam Convention:**

None

**Substances subject to the Stockholm Convention:**

None

**Healthcare controls**

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

### 15.2 Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

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**16: OTHER INFORMATION**

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Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Met. Corr. 1</b>	Substance or mixture corrosive to metals, category 1
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Skin Corr. 1B</b>	Skin corrosion, category 1B
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>STOT SE 3</b>	Specific target organ toxicity - single exposure, category 3
<b>Aquatic Chronic 3</b>	Hazardous to the aquatic environment, chronic toxicity, category 3
<b>H290</b>	May be corrosive to metals.
<b>H302</b>	Harmful if swallowed.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H335</b>	May cause respiratory irritation.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

**LEGEND:**

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

## GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP) H290 = May be corrosive to metals.
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) – Italy

## Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product. This document must not be regarded as a guarantee on any specific product property. The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses. Provide appointed staff with adequate training on how to use chemical products.