UNITECH SCIENTIFIC LLC

Free SO2 UniFlex Reagent Kit SDS FSO2-F

SAFETY DATA SHEET (HCS - 29 CFR 1910.1200(g))

1. CHEMICAL IDENTIFICATION and COMPANY CONTACT INFORMATION

Product trade name: Free Sulfites UniFLEX Reagents
Product No. : FrSO2-F
Recommended Use: Analysis
Restrictions on Use: N/A
Date of Issue: 01-2011
Date of Revision: 01 Aug 2015

Supplier: Unitech Scientific LLC
12026 Centralia Rd, Ste H
Hawaiian Gardens, CA 90716, USA

Information, Operations: 562 924-5150
Information in case of Emergency: 562 924-5150

2. HAZARDS IDENTIFICATION

2.1 classification of Diluent**, Oxidizer, Chromogen Conentrate** compound
This compound is classified:
- irritant for the skin

2.2 physical-chemical danger
This compound does not contain any particularly important physical chemical hazardous characteristics.

2.3 adverse effects for human health
Contact through the eyes may cause irritation, rashes, lachrymation, burns.
Some of the following symptoms or effects may occur after skin contact with the product: local irritation and inflammation accompanied by itching or burns, urticaria, dermatitis.

2.4 adverse effects for environment
Under the normal and foreseen condition of usage, the producto doesn't posess any dangerous properties for the environment.

2.1 classification of **Starter** compound
This compound is classified:
- harmful, because of its acute lethal effects
- harmful, because of its irreversible not lethal effects after only one exposition
- carcinogen category 3
- sensitising for the skin

2.2 physical-chemical danger
This compound does not contain any particularly important physical chemical hazardous caracteristics.

2.3 adverse effects for human health
Some of the following symptoms or effects may occur after the inhalation of the product: irritation of the respiratory system, CNS depression, headaches, dizziness, nausea, vomiting, systemic effects.
Some of the following symptoms and effects may occur after skin contact with the product: local irritation and inflammation accompanied by itching or burns, urticaria, dermatitis, photosensitization, chemical acne, systemic effects due to absorption through the skin.
Some of the following symptoms or effects may occur after the ingestion of the product: abdominal pain, CNS depression, nausea, vomiting, systemic effects.
Sound indications exist which tend to demonstrate that a single exposure may cause irreversible damages.

2.4 adverse effects for environment
Under the normal and foreseen condition of usage, the producto doesn't posess any dangerous properties for the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Diluent & Chromogen Conentrate

3.1 dangerous components of the preparation.
- substance: phosphoric acid
  concentration: 7.0 %
  symbol letters: C
  R phrases: 34
  CAS number: 007664-38-2
  CE number:

3.2 classification of the substances
PHOSPHORIC ACID
- corrosive for the skin
-

Oxidizer

3.1 dangerous components of the preparation.
- substance: hydrogen peroxide solution
  concentration: 3.0 %
  symbol letters: Xn C
  R phrases: 5-8-20/22-35
  CAS number: 007722-84-1
  CE number:

3.2 classification of the substances
HYDROGEN PEROXIDE
- harmful, because of its acute lethal effects
- very corrosive

Starter

3.1 dangerous components of the preparation.
- substance: methanol
  concentration: 15.0 %
  symbol letters: T

R phrases: 11-23/24/25-39/23/24/25
CAS number: 000067-56-1
CE number:
- substance: formaldehyde
concentration: 2.2 %
symbol letters: T C Xn Xi
R phrases: 23/24/25-34-40-43
CAS number: 000050-00-0
CE number:

3.2 classification of the substances
METHANOL
- highly flammable
- toxic, because of its acute lethal effects
- harmful, because of its irreversible not lethal effects after only one exposition

FORMALDEHYDE WATER SOLUTION
- toxic, because of its acute lethal effects
- corrosive for the skin
- carcinogen category 3
- sensitising for the skin

For the meaning of R phrases, please refer to paragraph 16 "Other information"

4. FIRST AID MEASURES - DILUENT, OXIDIZER, CHROMOGEN CONENTRATE

After inhalation
There is no know knowledge of any negative effects following product inhalation.
After skin or eyes contacts
If the product has come in contact with the skin, the victim may suffer from epidermic irritation or pain. In this case, proceed as follows:
- remove contaminated clothing, including shoes, without delay,
- if the use of water is not contraindicated (strong exothermic reactions, generation of flammable substances, etc.),wash away the product by running large amounts of water and soap. Run water over affected areas of the body for 15 minutes at least;
- if the use of water is contraindicated, mechanically remove the product (absorption through inert materials, dusting, etc.); thoroughly rinse product residuals with large amounts of water an soap.
Immediate emergency care should be sought if irritation or pain persist.
In case of eye contact, the victim may betray the following symptoms: lachrymation, burns, pain, irritation or intolerance to sunlight. In this case, proceed as follows:
- remove the patient's contact lenses, if any,
- keep the patient's eyelids open and wash away the product by pouring large amounts of water without delay. Run water over the eyes for 15 minutes at least.
Immediate emergency care shall be sought if eye irritation, lachrymation, pain and swelling persist.
After swallowing
There is no knowledge of negative effects following product ingestion.

First aid measures - Starter

After inhalation
Move the victim away from the polluted area and take him/her outdoors. Make sure that the victim is still breathing: recline his/her head backward and put your ear over his/her nose and mouth to check for breathing signs.

First aid for a non-breathing patient:
START MOUTH-TO-MOUTH RESUSCITATION
USE CHEST COMPRESSION IN THE ABSENCE OF HEARTBEATS.
MEDICAL CARE SHOULD BE OBTAINED QUICKLY.

First aid for a still breathing but unconscious patient:
The patient should be laid face downwards, with his/her head to the side.
Make sure that the patient's mouth is not blocked by an object that could stop breathing.
Take out the patient's tongue.
Remove any secretion in excess.
Clear the patient's mouth of any vomit.
Remove dentures, if any.
Introduce the Guedel device to prevent the tongue from obstructing the air flow; leave the Guedel device in place until the patient regains consciousness.
Administer oxygen.
Keep the patient warm.
NO ORAL ADMINISTRATION OF ANY KIND WHILE THE PATIENT IS UNCONSCIOUS
DO NOT ADMINISTER ALCOHOL, MORPHINE OR ANY OTHER STIMULANT

First aid for a still breathing and conscious patient:
Even though the patient is conscious, he/she may have trouble breathing.
Place the patient in the so-called "seating upright" position and keep him/her warm.
Administer oxygen.
If none of the above procedures improves breathing, it implies that asphyxia or pulmonary oedema may have occurred. SEEK MEDICAL HELP WITHOUT DELAY.

After skin or eyes contacts
In case of eye contact, the victim may betray the following symptoms: lachrymation, burns, pain, irritation or intolerance to sunlight. In this case, proceed as follows:
- remove the patient's contact lenses, if any,
- keep the patient's eyelids open and wash away the product by pouring large amounts of water without delay. Run water over the eyes for 15 minutes at least.
Immediate emergency care shall be sought if eye irritation, lachrymation, pain and swelling persist.
If the product has come in contact with the skin, the victim may suffer from epidermic irritation or pain. In this case, proceed as follows:
- remove contaminated clothing, including shoes, without delay,

- if the use of water is not contraindicated (strong exothermic reactions, generation of flammable substances, etc.),wash away the product by running large amounts of water and soap. Run water over affected areas of the body for 15 minutes at least;
- if the use of water is contraindicated, mechanically remove the product (absorption through inert materials, dusting, etc.); thoroughly rinse product residuals with large amounts of water an soap.
Immediate emergency care should be sought if irritation or pain persist.
after swallowing
DO NOT INDUCE VOMITING.

First aid for an unconscious patient:
The patient should be laid face downwards, with his/her head to the side.
Check for signs of spontaneous respiration.
Start mouth-to-mouth resuscitation if the patient no longer breaths.
NO ORAL ADMINISTRATION OF ANY KIND WHILE THE PATIENT IS UNCONSCIOUS
DO NOT ADMINISTER ALCOHOL, MORPHINE OR ANY OTHER STIMULANT
MEDICAL CARE SHOULD BE OBTAINED QUICKLY.

First aid for a conscious patient:
Administer two bags (10 g) of active carbon dissolved in 500 ml of water, followed by three doses of 1 bag (5 g) dissolved in 100 ml of water every 20 minutes.
Keep the patient warm in every circumstance until he/she recovers. IMMEDIATE EMERGENCY CARE SHOULD BE SOUGHT in case of acute pain and vomiting.
Be aware that the vomit can be inhaled and cause breathing distress; in this case, start the inhalation procedure.

5. FIRE-FIGHTING MEASURES

5.1 suitable extinguishing media
This product is not inflammable; nevertheless, in the case in which has involved in a fire, it is advisable to use the fit extinguishing media to extinguish the source of ignition.

5.2 extinguishing media which must not be used for safety reasons
It is advisable to avoid the usage of extinguishing media that are not compatible with the physical chemical properties of the compound and which may develop combustive substances.

5.3 special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
The release of an irritating smoke may result in case of fire.

5.4 special protective equipment for fire-fighters
Open cycle breathing apparatus and fire-proof equipment: helmet, jacket, pants, boots, gloves.

6. ACCIDENTAL RELEASE MEASURES

6.1 personal precautions
Don on personal protective equipment (PPE)to avoid skin and eye contact, as well as product inhalation.
Anyone who is not directly involved in rescue operations should be kept away from the scene.
Suppress or exclude every source of ignition that could possibly start a fire.
Stop the release of the product, provided the operation does not jeopardize the operators' safety.
Neither touch nor trample a product that has leaked onto the ground.

6.2 environmental precautions
Take all the necessary steps to avoid air propagation and water table, waterways and soil contamination, by means of appropriate mediums or retaining materials:
a) liquids shall be absorbed with earth, dry sand, vermiculites or any other non-flammable absorbing material;
b) solids shall be removed by mechanical means; also, arrange for roofing or retainer walls to prevent dusting;
c) vapors shall be suppressed with nebulized water, provided no soil or water pollution hazards exist.

6.3 methods for cleaning
Remove with mechanical means; alternatively, cover or absorb with earth, dry sand, infusorial earth or any other non-flammable compound, before transferring the product into an appropriate container for further disposal.

7. HANDLING AND STORAGE

7.1 handling
Use only in facilities that are well-ventilated or provided with a localized suction system.

7.2 storage
Both containers and associated materials used for product packaging shall comply, wherever applicable, comply with the standards governing road haulage of hazardous materials.

7.3 specific use(s)
For any particular usage of the product obtain specific information or contact the supplier technical service.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limit values

- **Chromogen Conentrate & Diluent**
  VLEP for PHOSPHORIC ACID:
  1 mg/mc 8 h [- ppm 8 h]
  2 mg/mc 15 min [- ppm 15 min]
  note: -
  rule: D.M. 26.02.04
- **Oxidizer**
  National or community values for exposure level limits are not available for the substances noted in 2.1
- **Starter**
  VLEP for METHANOL:
  260 mg/mc 8 h [200 ppm 8 h]
  mg/mc 15 min [ppm 15 min]
  note: Skin
  rule: Decreto 04.02.08

8.2.1 respiratory protection
Generally speaking, breathing protection shall be enforced by means of technical provisions designed to prevent the operator from coming in contact with the substance.
Products are best handled in a closed system; if this procedure cannot be implemented, arrange for a localized (stationary or mobile) suction system which returns drawn particles to an appropriate filter element or suppression system.

8.2.2 hand protection
Selecting appropriate hand PPE depends on its ability to withstand chemical agents corrosion, taking into account test results as set forth in EN 374 standard.
Use latex, neoprene, cyanocarbon, vynil PVC gloves.

8.2.3 eye protection
Use protection goggles or a face shield made up of acetate.

8.2.4 skin protection
You must use: apron, boots or complete protective clothes for the protection of skin.

8.2.5 environmental exposure controls
In regards to the methods of usage of the product in various environmental compartments, it is advisable to respect local national or community norms and regulations set forth to protect the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

appearance: LIQUID
odor:
pH:
boiling point/boiling range:
melting point/melting range:
flash point:
flammability (solid, gas):
auto-ignition temperature:
explosive properties:
oxidizing properties:

vapor pressure:
relative density:
water solubility:
fat solubility (solvent-oil to be specified):
partition coefficient n-octanol/water:
viscosity:
vapor density:
evaporation rate:
Other information:

10. STABILITY AND REACTIVITY

10.1 conditions to avoid
Additionally to that has been already said, there is no know hazardous environmental reaction in the occurrence of spillage of this product.

10.2 materials to avoid
Avoid contact with acids, bases, oxidizers, reducing agents or any other substance which may cause hazardous reactions whereas not expressly indicated in the respective technical bulletins.

10.3 hazardous decomposition products
To our knowledge, there does not exist any significant levels of hazardous decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 exposure for inhalation
There is no availability of specific information based on scientific research or practical experiences to the toxicological effects due to the inhalation of the substances contained in this product.

11.2 exposure for swallowing
12) There is no availability of information based on scientific research or practical experiences about the toxicological effects due to ingestion of substances contained in this product.

11.3 exposure for skin and eyes contact
There is no availability of specific information based on scientific research or practical experiences to the toxicological effects due to the contact of the substances contained in this product with skin or eyes.

12. ECOLOGICAL INFORMATION

12.1 general environmental information
Use the product according to good working practices and avoid release in the atmosphere.

12.2 ecotoxicity
This product does not contain any significant microbial inhibitory effect, thus disposal directly to sewage treatment plants is consented.

12.3 mobility
This product does not contain any substances of which there are information about their note or presumed distribution in the environmental compartments or about their absorption/desorption.

12.4 persistence and degradability
This product does not contain any substances of which is know the ability to degrade themselves in particular environmental circumstances following biodegradation or other reactions as oxidation or hydrolysis.

12.5 bioaccumulative potential
This product does not contain any substances of which information are been furnished about their ability to accumulate in living organisms and to pass through the food chain with reference to the values of Kow and BCF.

12.6 other adverse effects

There is no availability of information based on scientific research or practical experiences to the ability of this product to contribute to the reduction of the ozone layer, to the photochemical reactions, to the global heating.

13. DISPOSAL CONSIDERATIONS

Product residuals shall be dismantled in compliance with regional and national applicable standards.
Before being dumped or destroyed and subject to decontamination, product containers shall be entrusted to plants specialized in recycling, or disposing of, toxic-noxious waste.

14. TRANSPORT INFORMATION

14.1 particular precautions
During transportation, the following provisions shall be observed:
- the heaviest packages shall be arranged underneath and light or fragile packages secured to the top;
- hazardous products shall be kept apart;
- hazardous products in liquid form shall be secured under non-hazardous products;
- flammable or combustible products shall be kept away from oxidizing or corrosive products.

14.2 transport classification according to ADR/RID, IMDG/IMO, ICAO/IATA

regulation ADR/RID	UN number:	UN number:
UN number:	hazard class:	hazard class:
hazard class:	proper shipping name:	proper shipping name:
proper shipping name:	packing group:	packing group:
packing group:	labels required:	labels required:
labels required:	other applicable information:	other applicable information:
other applicable information:		
regulation IMDG/IMO	regulation ICAO/IATA	

15. REGULATORY INFORMATION

Additional domestic or Community provisions governing the use of the product are listed below:
- D.P.R. 303/56 "General procedure for occupational health and industrial hygiene."
- D.P.R. 547/55 "Procedures for the prevention of industrial injuries on the workplace."
- Lab. D. 626/94 "Implementation of Community directives with regard to the improvement of occupational health and safety conditions on the workplace."
- Lab. D. 334/99 "Monitoring significant accident hazards in connection with specific hazardous substances."
- Lab. D. 152/99 "Provisions regarding water protection from pollution."
- Lab. D. 22/97 "Implementation of the directives dealing with waste disposal."
- D.P.R. 203/88 "Implementation of the directives governing air quality standards."
- M.D. 12.08.1998 "Restrictions concerning the release and the use of some hazardous substances and compounds."
- D. Lvo 25/2002 "Implementation of the directive 98/24/CE on the protection of the health and of the safety of the workers against the risks derives from chemical agents during the work"

Information that appears on the **Diluent, Oxidizer, Chromogen Conentrate** label irritant

- Irritating to eyes and skin. (R 36/38)

Information that appears on the **Starter** label
toxic

Contains:
- METHANOL
- FORMALDEHYDE WATER SOLUTION
- Harmful by inhalation, in contact with skin and if swallowed. (R 20/21/22)
- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. (R 39/23/24/25)
- Limited evidence of a carcinogenic effect (R 40)
- May cause sensitization by skin contact. (R 43)
- Wear suitable protective clothing. (S 36)
- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). (S 45)
- Wear suitable gloves. (S 37)

16. OTHER INFORMATION

16.1 other relevant information
List of R phrases:
R 11 = Highly flammable.
R 23/24/25 = Toxic by inhalation, in contact with skin and if swallowed.
R 39/23/24/25 = Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 43 = May cause sensitization by skin contact.
R 34 = Causes burns.
R 40 = Limited evidence of a carcinogenic effect
The data reported in this safety data sheet have been gathered mostly from the following sources:

- National Toxicology Program (NTP) - U.S. Department of Health and Human Services
- NIOSH - Registry of Toxic Effects of Chemical Substances
- SAX - Dangerous Properties of Industrial Materials (7° ed.)

16.2 information added, erased or modified after revision of the safety data sheet
This safety sheet version replaces all previous versions in all points.

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