

176 IAH 18506062

176-18506062



Shipper's Name and Address EXPOTECH USA INC. 10700 ROCKLEY RD HOUSTON TX 77099-3516 US TE +12814960900		Shipper's Account Number		<p><b>Not Negotiable</b> <b>Air Waybill</b> Issued by <b>EMIRATES</b> <b>EMIRATES GROUP HEADQUARTERS</b> <b>UNITED ARAB EMIRATES</b></p> <p>Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.</p> <p>It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.</p>							
Consignee's Name and Address NASEEM BAGHDAD CO.		Consignee's Account Number		<p>It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.</p>							
IRAQ ,ERBIL , 100-METER STREET NEAR FAMILY MALL OC : ADNAN HAKEEM ERBIL 44001 IQ TE +9647504679606											
Issuing Carrier's Agent Name and City NTG AIR AND OCEAN, LLC CRESTVIEW HILLS, KY 41017				<p>Accounting Information SNTG25081866</p>							
Agent's IATA Code 01-1 9979/0071		Account No.									
Airport of Departure (Addr. of First Carrier) and Requested Routing GEORGE BUSH INTERCONTINENTAL APT/HO				Reference Number CUS25064572		Optional Shipping Information					
To DXB	By First Carrier EK	Routing and Destination DWC	to by EK	to by EBL	by EK	Currency USD	CHGS Code PPX	WT/VAL PPD COLL	Other PPD COLL	Declared Value for Carriage NVD	Declared Value for Customs NCV
Airport of Destination ERBIL INTERNATIONAL A				Requested Flight/Date EK0212/22 EK4029/23		Amount of insurance XXX		INSURANCE - If Carrier offers Insurance, and such Insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures in box marked "amount of insurance".			
Handling Information <b>PLEASE NOTIFY CONSIGNEE UPON ARRIVAL</b> <div style="float: right; margin-right: 10px;">           AES: NOEEI §30.37(A) - LOW VALUE (&lt;\$2501  SCI         </div>											
No. Of Pieces RCP	Gross Weight	kg lb	Rate Class Commodity Item No.	Chargeable Weight	Rate Charge	Total			Nature and Quantity of Goods (incl. Dimensions or Volume)		
	2	9.000	K	N	45.0	15.00	675.00			water test NOEEI §30.37(a) HS Code: 382200 DIMS 14x10x7 IN x 1 DIMS 17x11x12 IN x 1 VOL 0.053 M3  DANGEROUS GOODS IN EXCEPTED QUANTITIES	
2	9.000					675.00					
Prepaid				Weight Charge		Collect		Other Charges			
675.00											
				Valuation Charge							
				Tax							
Total Other Charges Due Agent				Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.							
Total Other Charges Due Carrier											
Total Prepaid				Total Collect		Signature of Shipper or his Agent					
675.00						JUSTIN LOUDEN					
						Signature of Shipper or his Agent					
Currency Conversion Rates				CC. Charges in Dest. Currency		20-Oct-25				CRESTVIEW HILLS	
For Carrier's use only at Destination				Charges at Destination		Total Collect Charges				Signature of Issuing Carrier or its Agent	
176-18506062											

Original 2 - (for Consignee)



ISO 9001 Certified

# Invoice

Page 1 of 1

## Expotech USA Inc.

10700 Rockley Rd.  
Houston TX 77099-3516  
Ph: (281) 496-0900 Fax (281) 496-0400.  
Email :sales@expotechusa.com  
<http://www.expotechusa.com>

EIN : 76-0302435

Order # : SOE0065292

Customer PO : PO2500230

Customer No : 42024014

Order Date : 08/25/2025

### Bill To

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRADING LTD  
AL-MANSOUR , AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

### Ship To

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRADING LTD  
AL-MANSOUR , AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

Invoice # : SIE0090323

Ship Date : 09/02/2025

Invoice Date : 09/02/2025

Ship Via : PICK UP

Payment Terms : Advance with order

Attention : SAPTHAMI.K +971 561474889

Ln	Catalog #	Cust Ref #	Description	U/M	Ord	Ship	B/O	Unit Price	Amount
1	<a href="#">1409563</a>	R-9510	AMPULE REFILL FOR K9510, 30/PK	PK	16	16	0	35.50	568.00
									Total Price \$568.00
									Handling Charges \$95.00
									Invoice Total \$663.00

7-LBS 14 X 10 X 7 "DG EXCEPTED QTY"

These commodities,technology or software were exported from the United States in accordance with the export administration regulations. Diversion contrary to U.S Laws prohibited. Ultimate Destination : IRAQ

This is to certify that the above named materials are properly marked,classified,described and labelled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

A 5 % interest on overdue balances will be assessed on the delinquent principal amount by 30-day periods. In the case of any late payment, the payment received will first be applied to the interest charge on the delinquent principal amount and then to payment of the delinquent principal amount.

At Expotech, we continuously strive to provide excellent customer service and invite your feedback.  
Please email [sales@expotechusa.com](mailto:sales@expotechusa.com) with any feedback and/or concerns so that we may enhance our service and serve your needs.



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Page 1 of 1

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Ph: (281) 496-0900 Fax (281) 496-0400.  
Email :[sales@expotechusa.com](mailto:sales@expotechusa.com)  
<http://www.expotechusa.com>

EIN : 76-0302435

Order # : SOE0065183

Customer PO : PO2500148

Customer No : 42024014

Order Date : 07/23/2025

**Bill To**

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRADING LTD  
AL-MANSOUR , AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

**Ship To**

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRADING LTD  
AL-MANSOUR , AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

Invoice # : SIE0090269

Ship Date : 08/19/2025

Invoice Date : 08/19/2025

Ship Via : WILL BE PICKED UP

Payment Terms : Advance with order

Attention : SAPTHAMI.K +971 561474889

Ln	Catalog #	Cust Ref #	Description	U/M	Ord	Ship	B/O	Unit Price	Amount
1	<a href="#">1409701</a>	K-9510	SULFIDE TEST KIT 0-1&1-10PPM	PK	2	2	0	85.86	171.72
2	<a href="#">2432652</a>	K-9520D	SULFIDE HR CHEMETS® TEST KIT (5-50 PPM), MDL: 5 PPM, METHOD: METHYLENE BLUE	EA	2	2	0	74.03	148.06
3	<a href="#">2432653</a>	K-9520A	SULFIDE HR CHEMETS® TEST KIT (25-250 PPM), MDL: 25 PPM, METHOD: METHYLENE BLUE	EA	2	2	0	75.89	151.78
4	<a href="#">2432655</a>	K-9520B	SULFIDE, TOTAL SOLUBLE	EA	2	2	0	87.05	174.10
								Total Price	\$645.66
								Handling Charges	\$75.00
								Invoice Total	\$720.66

13-LBS 17 X 11 X 12 "DG EXCEPTED QTY"

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# Packing List

## Expotech USA Inc.

10700 Rockley Rd.  
Houston TX 77099-3516  
Ph: (281) 496-0900 Fax (281) 496-0400.

SO # : SOE0065183  
Your PO : PO2500148  
Store : COSA648  
Order Date : 07/23/2025

### Bill To

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRAD.  
AL-MANSOUR, AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

### Ship To

NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TR.  
AL-MANSOUR, AL-AMIRAT  
BLOCK NO. 609  
STREET NO. 01, BUILDING NO. 21  
BAGHDAD  
IRAQ

Invoice # : SIE0090269

Ship Date : 08/19/2025

Invoice Date : 08/19/2025

Ship Via : WILL BE PICKED UP

Payment Terms : Advance with order

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Ln	Catalog #	Cust Ref #	Description	U/M	Ord	Ship	B/O
1	<a href="#">1409701</a>	K-9510	SULFIDE TEST KIT 0-1&1-10PPM	PK	2	2	0
2	<a href="#">2432652</a>	K-9520D	SULFIDE HR CHEMETS® TEST KIT (5-50 PPM), MDL: 5 PPM, METHOD: METHYLENE BLUE	EA	2	2	0
3	<a href="#">2432653</a>	K-9520A	SULFIDE HR CHEMETS® TEST KIT (25-250 PPM), MDL: 25 PPM, METHOD: METHYLENE BLUE	EA	2	2	0
4	<a href="#">2432655</a>	K-9520B	SULFIDE, TOTAL SOLUBLE	EA	2	2	0

13-LBS 17 X 11 X 12 "DG EXCEPTED QTY"

08/19/2025

12:48:14PM

**OPEN AND INSPECT IMMEDIATELY**  
QUESTIONS REGARDING THIS SHIPMENT SHOULD  
BE DIRECTED TO EXPOTECH USA INC  
WITHIN TEN (10) DAYS

PLEASE REFERENCE THE ORDER NUMBER  
CORRESPONDENCE  
**RETURNS WILL NOT BE ACCEPTED WITHOUT  
PRIOR AUTHORIZATION**

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*Please email [sales@expotechusa.com](mailto:sales@expotechusa.com) with any feedback and/or concerns so that we may enhance our service and serve your needs.*



# Packing List

**Expotech USA Inc.**

10700 Rockley Rd.  
Houston TX 77099-3516  
Ph: (281) 496-0900 Fax (281) 496-0400.

**SO # :** SOE0065292  
**Your PO :** PO2500230  
**Store :** COSA74  
**Order Date :** 08/25/2025

**Bill To**

**NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TRAD.**  
**AL-MANSOUR , AL-AMIRAT**  
**BLOCK NO. 609**  
**STREET NO. 01, BUILDING NO. 21**  
**BAGHDAD**  
**IRAQ**

**Ship To**

**NASEEM BAGHDAD CO. FOR MED & LAB EQUIP TR.**  
**AL-MANSOUR , AL-AMIRAT**  
**BLOCK NO. 609**  
**STREET NO. 01, BUILDING NO. 21**  
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**IRAQ**

**Invoice # :** SIE0090323  
**Invoice Date :** 09/02/2025  
**Payment Terms :** Advance with order

**Ship Date :** 09/02/2025  
**Ship Via :** PICK UP  
**Attention :** SAPTHAMI.K +971 561474889

Ln	Catalog #	Cust Ref #	Description	U/M	Ord	Ship	B/O
1	<a href="#">1409563</a>	R-9510	AMPULE REFILL FOR K9510, 30/PK	PK	16	16	0

**7-LBS 14 X 10 X 7 "DG EXCEPTED QTY"**

09/02/2025

4:59:25PM

**OPEN AND INSPECT IMMEDIATELY**  
QUESTIONS REGARDING THIS SHIPMENT SHOULD  
BE DIRECTED TO EXPOTECH USA INC  
WITHIN TEN (10) DAYS

**PLEASE REFERENCE THE ORDER NUMBER**  
**CORRESPONDENCE**  
**RETURNS WILL NOT BE ACCEPTED WITHOUT**  
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## Safety Data Sheet

Version number: 10.2  
SDS# K9503

2020-12-16

## SECTION 1: Identification

## 1.1 Product identifier

Trade name

## **K-9503 Ampoules, R-9510, R-9510A, R-9510B, R-9510C, R-9510D, K-9523 Ampoules**

#### Other means of identification

## Sulfide Vacu-vials® Ampoules and CHEMets® & VACUettes® Refills

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

## Component of water analysis test kits:

K-9503, K-9510, K-9510A, K-9510B, K-9510C, K-9510D, K-9523

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

CHEMetrics, Inc.  
4295 Catlett Road  
Midland VA 22728  
United States

Telephone: 1-540-788-9026  
Telefax: 1-540-788-4856  
e-mail: [technical@chemetrics.com](mailto:technical@chemetrics.com)  
Website: [www.chemetrics.com](http://www.chemetrics.com)

## 1.4 Emergency telephone number

## Emergency information service

ChemTel Inc.: 1-800-255-3924, +01-813-248-0585

## SECTION 2: Hazard(s) identification

## 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.2	skin corrosion/irritation	1B	Skin Corr. 1B	H314
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.8R	specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335
B.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290

For full text of abbreviations: see SECTION 16.

## 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word danger

### - Pictograms

GHS05, GHS07



## - Hazard statements

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

### - Precautionary statements

P234	Keep only in original container.
P260	Do not breathe dusts or mists.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/face protection.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	If inhaled: Remove person to fresh air and keep comfortable for breathing.
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.
P321	Specific treatment (see on this label).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents/container to industrial combustion plant.

### SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)

## 3.2 Mixtures

### Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
water	CAS No 7732-18-5	71 – 86		
hydrochloric acid	CAS No 7647-01-0	14 – 27	Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Met. Corr. 1 / H290	 
propan-2-ol	CAS No 67-63-0	1	Eye Irrit. 2 / H319 STOT SE 3 / H336 Flam. Liq. 2 / H225	 

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
N,N-Dimethyl-1,4-phenylene-diamine oxalate	CAS No 62778-12-5	≤ 0.1	Acute Tox. 2 / H300 Acute Tox. 4 / H312 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2A / H319 Skin Sens. 1 / H317 STOT SE 3 / H335	 

For full text of abbreviations: see SECTION 16.

## SECTION 4: First-aid measures

### 4.1 Description of first- aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

#### Following skin contact

Wash with plenty of soap and water.

#### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

#### Unsuitable extinguishing media

Water jet

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

Substance or mixture corrosive to metals.

#### Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

**Wear impact- and splash-resistant eyewear. Break the ampoule tip only when it is completely immersed in sample. Breaking the tip in air may cause the glass ampoule to shatter.**

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas. Never add water to this product.

- Handling of incompatible substances or mixtures

Do not mix with alkali.

- Keep away from

Caustic solutions

## Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

## 7.2 Conditions for safe storage, including any incompatibilities

### Managing of associated risks

#### - Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

#### - Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

## 7.3 Other information

**For optimum analytical performance, store in the dark and at room temperature.**

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
US	2-propanol	67-63-0	TLV®	200		400					ACGIH® 2019
US	isopropyl alcohol	67-63-0	PEL (CA)	400	980	500	1,225				Cal/OSHA PEL
US	isopropyl alcohol	67-63-0	REL	400 (10 h)	980 (10 h)	500	1,225				NIOSH REL
US	isopropyl alcohol	67-63-0	PEL	400	980						29 CFR 1910.1000
US	hydrogen chloride	7647-01-0	REL					5	7		NIOSH REL
US	hydrogen chloride	7647-01-0	TLV®					2			ACGIH® 2019
US	hydrogen chloride	7647-01-0	PEL					5	7		29 CFR 1910.1000
US	hydrogen chloride (muriatic acid) (hydrochloric acid)	7647-01-0	PEL (CA)	0.3	0.45			2			Cal/OSHA PEL

#### Notation

#### Ceiling-C

ceiling value is a limit value above which exposure should not occur

#### STEL

short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

#### TWA

time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Biological limit values						
Country	Name of agent	Parameter	Notation	Identifier	Value	Source
US	isopropanol	acetone		BEI®	40 mg/l	ACGIH® 2019

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
propan-2-ol	67-63-0	DNEL	500 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
propan-2-ol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	marine water	short-term (single instance)
propan-2-ol	67-63-0	PNEC	2,251 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
propan-2-ol	67-63-0	PNEC	28 mg/kg	terrestrial organisms	soil	short-term (single instance)

## 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

### Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Product description** CHEMets Refills: Sealed glass ampoules, 7 mm OD, for visual colorimetric water analysis. Each CHEMet™ ampoule contains approximately 0.2 - 0.5 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

VACUettes Refills: Sealed glass ampoules, 7 mm OD, with small glass capillary attached, for visual colorimetric water analysis. Each VACUette™ ampoule contains approximately 0.2 - 0.5 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

Vacu-vials Ampoules: Sealed glass ampoules, 13 mm OD, for instrumental colorimetric water analysis. Each K-9503 Vacu-vial™ ampoule contains approximately 2 mL of liquid reagent sealed under vacuum. Each K-9523 Vacu-vial™ ampoule contains approximately 4.5 mL of liquid reagent sealed under vacuum. Test kits contain 30 ampoules.

### Appearance

Physical state	liquid
Color	colorless
Odor	sharp

### Other safety parameters

pH (value)	<1 (acid)
Melting point/freezing point	not determined
Initial boiling point and boiling range	150 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapor pressure	not determined
Density	not determined
Vapor density	this information is not available
Relative density	1.1 (water = 1)

**Solubility(ies)**

- Water solubility	miscible in any proportion
--------------------	----------------------------

**Partition coefficient**

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

**SECTION 10: Stability and reactivity****10.1 Reactivity**

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". Substance or mixture corrosive to metals.

**10.2 Chemical stability**

See below "Conditions to avoid".

**10.3 Possibility of hazardous reactions**

No known hazardous reactions.

**10.4 Conditions to avoid**

There are no specific conditions known which have to be avoided.

**10.5 Incompatible materials**

Oxidizers

Release of flammable materials with:

Light metals (due to the release of hydrogen in an acid/alkaline medium)

**10.6 Hazardous decomposition products**

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

**Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)**

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
N,N-Dimethyl-1,4-phenylenediamine oxalate	62778-12-5	oral	5 mg/kg
N,N-Dimethyl-1,4-phenylenediamine oxalate	62778-12-5	dermal	1,100 mg/kg
N,N-Dimethyl-1,4-phenylenediamine oxalate	62778-12-5	inhalation: dust/mist	1.5 mg/4h

#### Skin corrosion/irritation

Causes severe skin burns and eye damage.

#### Serious eye damage/eye irritation

Causes serious eye damage.

#### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			
Name of substance	CAS No	Classification	Number
hydrochloric acid	7647-01-0	3	
propan-2-ol	67-63-0	3	

#### Legend

3 Not classifiable as to carcinogenicity in humans

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

#### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

please consider the relevant national or regional provisions

## SECTION 14: Transport information

### 14.1 UN number

3265

### 14.2 UN proper shipping name

UN3265, Corrosive liquid, acidic, organic, n.o.s.,  
(contains: hydrochloric acid, propan-2-ol), 8, II

Technical name (hazardous ingredients)

hydrochloric acid, propan-2-ol

### 14.3 Transport hazard class(es)

Class

8 (corrosive substances)

### 14.4 Packing group

II (substance presenting medium danger)

### 14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

### 14.6 Other relevant information

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

•CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.

•CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

## 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

### Information for each of the UN Model Regulations

#### Transport of dangerous goods by road or rail (49 CFR US DOT)

Index number	3265
Proper shipping name	UN3265, Corrosive liquid, acidic, organic, n.o.s., (contains: hydrochloric acid, propan-2-ol), 8, II
- Reportable quantity (RQ)	18,519 lbs (8,407 kg) (hydrochloric acid)
Class	8
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	148, B2, IB2, T11, TP2, TP27
ERG No	153

#### International Maritime Dangerous Goods Code (IMDG)

UN number	3265
Proper shipping name	UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (contains: hydrochloric acid, propan-2-ol), 8, II
Class	8
Marine pollutant	-
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	274
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-A, S-B
Segregation group	1 - Acids

**International Civil Aviation Organization (ICAO-IATA/DGR)**

UN number	3265
Proper shipping name	UN3265, Corrosive liquid, acidic, organic, n.o.s., (contains: hydrochloric acid, propan-2-ol), 8, II
Class	8
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	0,5 L

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations specific for the product in question****National regulations (United States)**

**Toxic Substance Control Act (TSCA)** all ingredients are listed

**Superfund Amendment and Reauthorization Act (SARA TITLE III )**

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities				
Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
hydrochloric acid	7647-01-0	f	5,000	500

Legend

f Chemical on the original list that does not meet toxicity criteria but because of its acute lethality, high production volume and known risk is considered chemical of concern ("Other chemicals"). (November 17, 1986, and February 15, 1990.)

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name of substance	CAS No	Remarks	Effective date
hydrochloric acid	7647-01-0	acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size	1986-12-31
propan-2-ol	67-63-0	only persons who manufacture by the strong acid process are subject, supplier notification not required	1986-12-31

## Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
hydrochloric acid	7647-01-0		1 3	5000 (2270)

Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

3 "3" indicates that the source is section 112 of the Clean Air Act

## Clean Air Act

Name of substance	CAS No	Type of registration	Basis for listing	Threshold quantity (lbs)
hydrochloric acid	7647-01-0	Toxic substance	a	5000
hydrochloric acid	7647-01-0	Toxic substance	d	15000

Legend

a Mandated for listing by Congress.

d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

## Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
hydrochloric acid	7647-01-0		CO R1
propan-2-ol	67-63-0		F3

Legend

CO Corrosive

F3 Flammable - Third Degree

R1 Reactive - First Degree

## California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

## Industry or sector specific available guidance(s)

### NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	1	material that must be preheated before ignition can occur

Category	Rating	Description
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

## NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

## National inventories

Country	Inventory	Status
AU	AICS	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	not all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	not all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	not all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

### Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)

**Legend**

REACH Reg. REACH registered substances  
TCSI Taiwan Chemical Substance Inventory  
TSCA Toxic Substance Control Act

**15.2 Chemical Safety Assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information, including date of preparation or last revision****Key literature references and sources for data**

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

**Classification procedure**

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

**List of relevant phrases (code and full text as stated in chapter 2 and 3)**

Code	Text
H225	Highly flammable liquid and vapor.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

**Disclaimer**

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.



## Safety Data Sheet

Version number: 10.2  
SDS# S9500

2020-12-16

### SECTION 1: Identification

#### 1.1 Product identifier

Trade name

**A-9500**

Other means of identification

Activator Solution for Sulfide Vacu-vials®,  
CHEMets®, & VACUettes® Kits

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

Component of water analysis test kits:

K-9503, K-9510, K-9510A, K-9510B, K-9510C, K-9510D, K-9523

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

CHEMetrics, Inc.  
4295 Catlett Road  
Midland VA 22728  
United States

Telephone: 1-540-788-9026  
Telefax: 1-540-788-4856  
e-mail: [technical@chemetrics.com](mailto:technical@chemetrics.com)  
Website: [www.chemetrics.com](http://www.chemetrics.com)

#### 1.4 Emergency telephone number

Emergency information service

ChemTel Inc.: 1-800-255-3924, +01-813-248-0585

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.1O	acute toxicity (oral)	5	Acute Tox. 5	H303
3.2	skin corrosion/irritation	1	Skin Corr. 1	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.8R	specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335

For full text of abbreviations: see SECTION 16.

## 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word                    danger

- Pictograms

GHS05, GHS07



- Hazard statements

H290                            May be corrosive to metals.

H303                            May be harmful if swallowed.

H314                            Causes severe skin burns and eye damage.

H335                            May cause respiratory irritation.

- Precautionary statements

P234                            Keep only in original packaging.

P260                            Do not breathe dusts or mists.

P271                            Use only outdoors or in a well-ventilated area.

P280                            Wear eye protection/face protection.

P301+P330+P331            IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P304+P340                    IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

P321                            Specific treatment (see on this label).

P363                            Wash contaminated clothing before reuse.

P390                            Absorb spillage to prevent material damage.

P403+P233                    Store in a well-ventilated place. Keep container tightly closed.

P405                            Store locked up.

P406                            Store in a corrosion resistant container with a resistant inner liner.

P501                            Dispose of contents/container to industrial combustion plant.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
hydrochloric acid	CAS No 7647-01-0	79	Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Met. Corr. 1 / H290	 
ferric chloride, hexahydrate	CAS No 10025-77-1 7705-08-0	21	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Dam. 1 / H318 Met. Corr. 1 / H290	 

For full text of abbreviations: see SECTION 16.

## SECTION 4: First-aid measures

### 4.1 Description of first- aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

#### Following skin contact

Wash with plenty of soap and water.

#### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

#### Unsuitable extinguishing media

Water jet

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

Substance or mixture corrosive to metals.

#### Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

**Wear Impact- and splash-resistant eyewear.**

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas. Never add water to this product.

- Handling of incompatible substances or mixtures

Do not mix with alkali.

- Keep away from

Caustic solutions

## Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

## 7.2 Conditions for safe storage, including any incompatibilities

### Managing of associated risks

#### - Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

#### - Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

## 7.3 Other information

**For optimum analytical performance, store in the dark and at room temperature.**

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
US	hydrogen chloride	7647-01-0	REL					5	7		NIOSH REL
US	hydrogen chloride	7647-01-0	TLV®					2			ACGIH® 2019
US	hydrogen chloride	7647-01-0	PEL					5	7		29 CFR 1910.1000
US	hydrogen chloride (muriatic acid) (hydrochloric acid)	7647-01-0	PEL (CA)	0.3	0.45			2			Cal/OSHA PEL

#### Notation

Ceiling-C ceiling value is a limit value above which exposure should not occur

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
ferric chloride, hexahydrate	10025-77-1 7705-08-0	DNEL	2.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

### 8.2 Exposure controls

**Appropriate engineering controls**

General ventilation.

**Individual protection measures (personal protective equipment)****Eye/face protection**

Wear eye/face protection.

**Skin protection****- Hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**- Other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

**Environmental exposure controls**

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Product description** Activator Solution: Plastic bottle contains approximately 9 mL of liquid reagent. Test kits contain one (1) bottle of solution. Activator Solution packs contain six (6) bottles of solution.

**Appearance**

Physical state	liquid
Color	brownish gold
Odor	sharp

**Other safety parameters**

pH (value)	<1 (acid)
Melting point/freezing point	not determined
Initial boiling point and boiling range	196 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined

Vapor pressure	not determined
Density	not determined
Vapor density	this information is not available
Relative density	1.2 (water = 1)

## Solubility(ies)

- Water solubility	miscible in any proportion
--------------------	----------------------------

## Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

**SECTION 10: Stability and reactivity****10.1 Reactivity**

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". Substance or mixture corrosive to metals.

**10.2 Chemical stability**

See below "Conditions to avoid".

**10.3 Possibility of hazardous reactions**

No known hazardous reactions.

**10.4 Conditions to avoid**

There are no specific conditions known which have to be avoided.

**10.5 Incompatible materials**

Oxidizers

**10.6 Hazardous decomposition products**

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

#### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

##### Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful if swallowed.

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
ferric chloride, hexahydrate	10025-77-1 7705-08-0	oral	500 mg/kg

##### Skin corrosion/irritation

Causes severe skin burns and eye damage.

##### Serious eye damage/eye irritation

Causes serious eye damage.

##### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

##### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

##### Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			
Name of substance	CAS No	Classification	Number
hydrochloric acid	7647-01-0	3	

Legend

3 Not classifiable as to carcinogenicity in humans

##### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

##### Specific target organ toxicity - single exposure

May cause respiratory irritation.

##### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

**Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

**SECTION 12: Ecological information****12.1 Toxicity**

Shall not be classified as hazardous to the aquatic environment.

**12.2 Persistence and degradability**

Data are not available.

**12.3 Bioaccumulative potential**

Data are not available.

**12.4 Mobility in soil**

Data are not available.

**12.5 Results of PBT and vPvB assessment**

Data are not available.

**12.6 Other adverse effects**

Data are not available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

please consider the relevant national or regional provisions

**SECTION 14: Transport information****14.1 UN number**

1760

**14.2 UN proper shipping name**

UN1760, Corrosive liquid, n.o.s., (contains: hydrochloric acid, ferric chloride, hexahydrate), 8, II

Technical name (hazardous ingredients)

hydrochloric acid, ferric chloride, hexahydrate

**14.3 Transport hazard class(es)**

Class

8 (corrosive substances)

**14.4 Packing group**

II (substance presenting medium danger)

**14.5 Environmental hazards**

non-environmentally hazardous acc. to the dangerous goods regulations

**14.6 Other relevant information**

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

•CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.

•CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and mark-

ings in accordance with applicable transportation regulations.

#### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

##### Information for each of the UN Model Regulations

###### **Transport of dangerous goods by road or rail (49 CFR US DOT)**

Index number	1760
Proper shipping name	UN1760, Corrosive liquid, n.o.s., (contains: hydrochloric acid, ferric chloride, hexahydrate), 8, II
- Reportable quantity (RQ)	4,762 lbs (2,162 kg) (hydrochloric acid) (ferric chloride, hexahydrate)
Class	8
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	B2, IB2, T11, TP2, TP27
ERG No	154

###### **International Maritime Dangerous Goods Code (IMDG)**

UN number	1760
Proper shipping name	UN1760, CORROSIVE LIQUID, N.O.S., (contains: hydrochloric acid, ferric chloride, hexahydrate), 8, II
Class	8
Marine pollutant	-
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	274
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-A, S-B

**International Civil Aviation Organization (ICAO-IATA/DGR)**

UN number	1760
Proper shipping name	UN1760, Corrosive liquid, n.o.s., (contains: hydrochloric acid, ferric chloride, hexahydrate), 8, II
Class	8
Packing group	II
Danger label(s)	8
	
Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	0,5 L

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations specific for the product in question****National regulations (United States)**

**Toxic Substance Control Act (TSCA)** all ingredients are listed

**Superfund Amendment and Reauthorization Act (SARA TITLE III )**

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities				
Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
hydrochloric acid	7647-01-0	f	5,000	500

Legend

f Chemical on the original list that does not meet toxicity criteria but because of its acute lethality, high production volume and known risk is considered chemical of concern ("Other chemicals"). (November 17, 1986, and February 15, 1990.)

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name of substance	CAS No	Remarks	Effective date
hydrochloric acid	7647-01-0	acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size	1986-12-31

## Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
hydrochloric acid	7647-01-0		1 3	5000 (2270)
ferric chloride, hexahydrate	7705-08-0		1	1000 (454)

Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

3 "3" indicates that the source is section 112 of the Clean Air Act

## Clean Air Act

Name of substance	CAS No	Type of registration	Basis for listing	Threshold quantity (lbs)
hydrochloric acid	7647-01-0	Toxic substance	a	5000
hydrochloric acid	7647-01-0	Toxic substance	d	15000

Legend

a Mandated for listing by Congress.

d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

## Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
hydrochloric acid	7647-01-0		CO R1
ferric chloride, hexahydrate	7705-08-0		CO

Legend

CO Corrosive

R1 Reactive - First Degree

## California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

## Industry or sector specific available guidance(s)

### NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

### NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

### National inventories

Country	Inventory	Status
AU	AICS	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

#### Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory

**Legend**

NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information, including date of preparation or last revision

### Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.