

Printing date 03/29/2019 Version Number 4 Reviewed on 03/29/2019

1 Identification

· Product identifier

· Trade name: EM 200.7 Interference Check Standard no.3 (50 mL)

· Part number: ICM-223

· Application of the substance / the mixture Reagents and Standards for Analytical Chemical Laboratory Use

· Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Agilent Technologies, Inc. 5301 Stevens Creek Blvd. Santa Clara, CA 95051 USA

· Information department:

Telephone: 800-227-9770

e-mail: pdl-msds author@agilent.com

· Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

· Classification of the substance or mixture



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

- · Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





GHS05

GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

nitric acid

lead dinitrate

Nitric acid, nickel(2+) salt, hexahydrate

diarsenic trioxide

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· Hazard statements

Causes skin irritation.

Causes serious eye damage.

May cause cancer.

May damage fertility or the unborn child.

· Precautionary statements

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wash thoroughly after handling.

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

If on skin: Wash with plenty of water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- · NFPA ratings (scale 0 4)



 $\begin{aligned} & \text{Health} = 3 \\ & \text{Fire} = 0 \\ & \text{Reactivity} = 0 \end{aligned}$

· HMIS-ratings (scale 0 - 4)



Health = *3Fire = 0

EACTIVITY 0 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- \cdot **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:		
	potassium nitrate	5.172%
7697-37-2	nitric acid	4.95%
10099-74-8	lead dinitrate	0.1598%
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate	0.149%
10026-22-9	cobalt (II) nitrate hexahydrate	0.148%
543-81-7	acetic acid beryllium salt	0.141%
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| 1327-53-3 | diarsenic trioxide | (Contd. of page 2) | 0.132% |

4 First-aid measures

- · Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures
- Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· Protective Action Criteria for Chemicals

· PAC-1:	
7757-79-1 potassium nitrate	9 mg/m ³
7697-37-2 nitric acid	0.16 ppm
10099-74-8 lead dinitrate	0.24 mg/m ³
13478-00-7 Nitric acid, nickel(2+) salt, hexahydrate	1.5 mg/m ³
10026-22-9 cobalt (II) nitrate hexahydrate	0.3 mg/m^3
10196-18-6 zinc(II) nitrate hexahydrate	27 mg/m ³
1327-53-3 diarsenic trioxide	0.27 mg/m ³
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		(0.11.2
10102-45-1	thallium nitrate	(Contd. of page 0.078 mg/m
	copper dinitrate	8.9 mg/m ³
	Nitric acid, cadmium salt, tetrahydrate	0.27 mg/m^3
	selenium dioxide	0.84 mg/m^3
	ammonium trioxovanadate	0.01 mg/m ³
10377-66-9	manganese dinitrate	9.8 mg/m ³
	barium nitrate	2.9 mg/m ³
7761-88-8	silver nitrate	0.047 mg/m
· PAC-2:		
	potassium nitrate	100 mg/m ³
7697-37-2	<u> </u> ^	24 ppm
	lead dinitrate	180 mg/m ²
	Nitric acid, nickel(2+) salt, hexahydrate	53 mg/m ³
	cobalt (II) nitrate hexahydrate	23 mg/m ³
	zinc(II) nitrate hexahydrate	300 mg/m
	diarsenic trioxide	3.0 mg/m ³
10102-45-1	thallium nitrate	4.3 mg/m ³
3251-23-8	copper dinitrate	31 mg/m³
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	2.1 mg/m ³
7446-08-4	selenium dioxide	1.6 mg/m ³
7803-55-6	ammonium trioxovanadate	0.11 mg/m
10377-66-9	manganese dinitrate	16 mg/m³
10022-31-8	barium nitrate	350 mg/m
7761-88-8	silver nitrate	0.9 mg/m^3
· PAC-3:		
7757-79-1	potassium nitrate	600 mg/m ³
7697-37-2	nitric acid	92 ppm
10099-74-8	lead dinitrate	1,100 mg/n
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate	320 mg/m ³
10026-22-9	cobalt (II) nitrate hexahydrate	140 mg/m³
10196-18-6	zinc(II) nitrate hexahydrate	1,800 mg/n
1327-53-3	diarsenic trioxide	9.1 mg/m ³
10102-45-1	thallium nitrate	26 mg/m ³
3251-23-8	copper dinitrate	190 mg/m³
	Nitric acid, cadmium salt, tetrahydrate	13 mg/m ³
7446-08-4	selenium dioxide	9.5 mg/m ³
7803-55-6	ammonium trioxovanadate	80 mg/m ³
10377-66-9	manganese dinitrate	96 mg/m ³
10022-31-8	barium nitrate	2,100 mg/m
		(Contd. on page



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 7761-88-8
 silver nitrate
 5.4 mg/m³

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

- · Information about protection against explosions and fires: Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters

· Com	· Components with limit values that require monitoring at the workplace:			
7697-	7697-37-2 nitric acid			
PEL	Long-term value: 5 mg/m³, 2 ppm			
REL	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm			
TLV	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5.2 mg/m³, 2 ppm			
10099	9-74-8 lead dinitrate			
PEL	Long-term value: 0.05 mg/m³ as Pb; See 29 CFR 1910.1025			
REL	Long-term value: 0.05* mg/m³ as Pb;*8-hr TWA; See Pocket Guide App. C			
TLV	Long-term value: 0.05 mg/m³ as Pb; BEI			
1327-	1327-53-3 diarsenic trioxide			
PEL	Long-term value: 0.01 mg/m³ as As; 29CFR1910.1018			
REL	Ceiling limit value: 0.002 mg/m³ as As; 15min; See Pocket Guide App. A			
TLV	Long-term value: 0.01 mg/m³			

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· Ingredients with biological limit values:

10099-74-8 lead dinitrate

Parameter: Lead

BEI 30 μg/100 ml Medium: blood Time: not critical

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· Breathing equipment:

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

Protection of hands:

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· Material of gloves

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

• Penetration time of glove material For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form: Fluid

Color: According to product specification

· Odor: Characteristic · Odor threshold: Not determined.

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· pH-value:	Not determined.	
· Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 100 °C (212 °F)	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Not applicable.	
· Decomposition temperature:	Not determined.	
· Auto igniting:	Product is not selfigniting.	
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits: Lower: Upper:	Not determined. Not determined.	
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
 Density: Relative density Vapor density Evaporation rate 	Not determined. Not determined. Not determined. Not determined.	
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/water	er): Not determined.	
· Viscosity: Dynamic: Kinematic:	Not determined. Not determined.	
· Solvent content: Water: VOC content:	88.1 % 0.00 % 0.0 g/l / 0.00 lb/gal	
Solids content: Other information	7.0 % No further relevant information available.	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

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11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· Acute toxi	•			
· LD/LC50	· LD/LC50 values that are relevant for classification:			
ATE (Acu	ATE (Acute Toxicity Estimate)			
Oral	LD50	8,384 mg/kg		
Inhalative	LC50/4 h	299 mg/L		
7757-79-1	potassiun	n nitrate		
Oral	LD50	3,750 mg/kg (rat)		
7697-37-2	nitric acio	d		
Inhalative	LC50/4 h	67 mg/L (rat)		
13478-00-	7 Nitric ac	cid, nickel(2+) salt, hexahydrate		
Oral	LD50	1,620 mg/kg (rat)		
10026-22-	9 cobalt (I	I) nitrate hexahydrate		
Oral	LD50	691 mg/kg (rat)		
1327-53-3	diarsenic	trioxide		
Oral	LD50	20 mg/kg (rat)		
10102-45-	1 thallium	nitrate		
Oral	LD50	33 mg/kg (mouse)		
10022-68-	1 Nitric ac	cid, cadmium salt, tetrahydrate		
Oral	LD50	300 mg/kg (rat)		
7803-55-6 ammonium trioxovanadate				
Oral	LD50	58 mg/kg (rat)		
Dermal	LD50	2,102 mg/kg (rat)		
Inhalative	LC50/4 h	7.8 mg/L (rat)		
· Primary i	tant off			

- · Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- · on the eye: Strong irritant with the danger of severe eye injury.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

· Carcinogenic categories

· IARC (Inte	· IARC (International Agency for Research on Cancer)			
10099-74-8	lead dinitrate	2A		
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate	1		
10026-22-9	cobalt (II) nitrate hexahydrate	2B		
	acetic acid beryllium salt	1		
1327-53-3	diarsenic trioxide	1		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	1		
7446-08-4	selenium dioxide	3		

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K		
K		
K		
K		
None of the ingredients is listed.		

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information	
· UN-Number · DOT, IMDG, IATA	UN3264
· UN proper shipping name · DOT · IMDG, IATA	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

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· Transport hazard class(es)

· DOT, IMDG, IATA



· Class 8 Corrosive substances

· Label

· Packing group

· DOT, IMDG, IATA

• Environmental hazards: Not applicable.

· Special precautions for user Warning: Corrosive substances

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· Danger code (Kemler): 80

· EMS Number: F-A,S-B
· Segregation groups Acids
· Stowage Category A

• Stowage Code SW2 Clear of living quarters.

Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code Not applicable.

· Transport/Additional information:

 \cdot DOT

• Quantity limitations On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· IMDG

Limited quantities (LQ)Excepted quantities (EQ)5LCode: E1

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation": UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

(NITRIC ACID), 8, III

15 Regulatory information

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

·Sara

· Section 355 (extremely hazardous substances):

7697-37-2 nitric acid

1327-53-3 diarsenic trioxide

· Section 313 (Specific toxic chemical listings):

7757-79-1 potassium nitrate

7697-37-2 nitric acid

7789-02-8 chromium (III) nitrate nonahydrate

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10099-74-8	lead dinitrate
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate
	cobalt (II) nitrate hexahydrate
543-81-7	acetic acid beryllium salt
10196-18-6	zinc(II) nitrate hexahydrate
1327-53-3	diarsenic trioxide
10102-45-1	thallium nitrate
3251-23-8	copper dinitrate
10022-68-1	Nitric acid, cadmium salt, tetrahydrate
7446-08-4	selenium dioxide
7803-55-6	ammonium trioxovanadate
10377-66-9	manganese dinitrate
10022-31-8	barium nitrate
7761-88-8	silver nitrate
TSCA (Tox	ic Substances Control Act):
7757-79-1	potassium nitrate
7697-37-2	nitric acid
10099-74-8	lead dinitrate
1327-53-3	diarsenic trioxide
10102-45-1	thallium nitrate
3251-23-8	copper dinitrate
7446-08-4	selenium dioxide
7803-55-6	ammonium trioxovanadate
10377-66-9	manganese dinitrate
10022-31-8	barium nitrate
7761-88-8	silver nitrate
7732-18-5	water
TSCA new	(21st Century Act): (Substances not listed)
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate
10026-22-9	cobalt (II) nitrate hexahydrate
543-81-7	acetic acid beryllium salt
Proposition	65
Chemicals	known to cause cancer:
10099-74-8	lead dinitrate
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate
	acetic acid beryllium salt
1327-53-3	diarsenic trioxide
10022-68-1	Nitric acid, cadmium salt, tetrahydrate
Chemicals	known to cause reproductive toxicity for females:
None of the	ingredients is listed.



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· Chemicals known to cause reproductive toxicity for males:		
13478-00-7 Nitric acid, nickel(2+) salt, hexahydrate		
· Chemicals known to cause developmental toxicity:		
13478-00-7	Nitric acid, nickel(2+) salt, hexahydrate	
1327-53-3	diarsenic trioxide	

· Carcinogenic categories

· EPA (Environmental Protection Agency)			
10099-74-8	lead dinitrate	B2	
1327-53-3	diarsenic trioxide	A	
10102-45-1	thallium nitrate	II	
7446-08-4	selenium dioxide	D	
10377-66-9	manganese dinitrate	D	
10022-31-8	barium nitrate	D, CBD(inh), NL(oral)	

· TLV (Threshold Limit Value established by ACGIH)		
10099-74-8	lead dinitrate	A3
1327-53-3	diarsenic trioxide	A1
10022-31-8	barium nitrate	A4

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

- · National regulations:
- Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- · Department issuing SDS: Document Control / Regulatory
- · Contact: regulatory@ultrasci.com
- · Date of preparation / last revision 03/29/2019 / 3
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

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LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health TLV: Threshold Limit Value

PEL: Permissible Exposure Limit REL: Recommended Exposure Limit BEI: Biological Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Carc. 1A: Carcinogenicity – Category 1A Repr. 1A: Reproductive toxicity – Category 1A

* Data compared to the previous version altered.

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