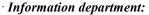
1 Identification

- · Product identifier
- · Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃
- · Article number: AA1000
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Aqua Solutions, Inc. 6913 Highway 225 DEER PARK, TX 77536 USA 800-256-2586



Technical Coordinator

Sherman Nelson shermann@aquasolutions.org

Emergency telephone number:

Chemtrec: 800-424-9300 Canutec: 613-996-6666



2 Hazard(s) identification

· Classification of the substance or mixture



GHS05 Corrosion

Skin Corrosion 1A H314 Causes severe skin burns and eye damage.

Eye Damage 1 H318 Causes serious eye damage.

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



· Signal word Danger

· Hazard-determining components of labeling:

Nitric Acid

· Hazard statements

Causes severe skin burns and eye damage.

· Precautionary statements

Do not breathe dusts or mists.

Wash thoroughly after handling.

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

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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.

Specific treatment (see on this label).

(Contd. on page 2)

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 1)

Wash contaminated clothing before reuse.

Store locked up.

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

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



Health = 3Fire = 0Reactivity = 0

· HMIS-ratings (scale 0 - 4)



3 Health = 3Fire = 0

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

3 Composition/information on ingredients

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

· Dangerous comp		
CAS: 7697-37-2	Nitric Acid	3.508%
· Table of Nonhazardous Ingredients		
CAS: 7732-18-5	Water	96.492%
CAS: 7784-27-2	Aluminum Nitrate	0.0001%

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: Drink copious amounts of water and provide fresh air. Immediately call a 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

During heating or in case of fire poisonous gases are produced.

(Contd. on page 3)

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 2)

- · Advice for firefighters
- · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Environmental precautions:

Dilute with plenty of water.

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 section 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

CAS: 7697-37-2	Nitric Acid	0.16 ppm
CAS: 7784-27-2	Aluminum Nitrate	83 mg/m³
CAS: 554-13-2	Lithium Carbonate	3.1 mg/m ³
CAS: 13477-34-4	Calcium Nitrate Tetrahydrate	12 mg/m³
CAS: 6156-78-1	Manganese Acetate Tetrahydrate	13 mg/m³
CAS: 10196-18-6	Zinc Nitrate, Reagent Grade	27 mg/m³
CAS: 19004-19-4	Cupric Nitrate Hydrate	42 mg/m³
CAS: 1314-62-1	Vanadium Pentoxide Reagent	0.64 mg/m^3
CAS: 7761-88-8	Silver Nitrate	0.047 mg/m
CAS: 10022-31-8	Barium Nitrate	2.9 mg/m^3
CAS: 10099-74-8	Lead Nitrate	0.24 mg/m^3
CAS: 7439-89-6	Iron Metal	3.2 mg/m^3
CAS: 7439-95-4	Magnesium	18 mg/m³
CAS: 7440-02-0	Nickel Metal	4.5 mg/m^3
CAS: 7440-31-5	Tin Metal	6 mg/m ³
CAS: 7440-36-0	Antimony Metal	1.5 mg/m^3
CAS: 10022-68-1	Cadmium Nitrate	0.27 mg/m^3
CAS: 12054-85-2	Ammonium Molybdate Tetrahydrate ACS Grade	2.8 mg/m^3
CAS: 87-69-4	L-Tartaric Acid	1.6 mg/m^3
CAS: 1336-21-6	Ammonium Hydroxide	61 ppm
PAC-2:		'
CAS: 7697-37-2	Nitric Acid	24 ppm
CAS: 7784-27-2	Aluminum Nitrate	920 mg/m

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO $_3$

CAS: 554-13-2	Lithium Carbonate	(Contd. of page 11 ppm
CAS: 13477-34-4	Calcium Nitrate Tetrahydrate	130 mg/n
CAS: 6156-78-1	Manganese Acetate Tetrahydrate	22 mg/m ²
CAS: 10196-18-6	Zinc Nitrate, Reagent Grade	300 mg/n
CAS: 19004-19-4	Cupric Nitrate Hydrate	150 mg/n
CAS: 1314-62-1	Vanadium Pentoxide Reagent	7 mg/m³
CAS: 7761-88-8	Silver Nitrate	0.9 mg/m
CAS: 10022-31-8	Barium Nitrate	350 mg/n
CAS: 10099-74-8	Lead Nitrate	180 mg/n
CAS: 7439-89-6	Iron Metal	35 mg/m ²
CAS: 7439-95-4	Magnesium	200 mg/n
CAS: 7440-02-0	Nickel Metal	50 mg/m ²
CAS: 7440-31-5	Tin Metal	67 mg/m ⁻
CAS: 7440-36-0	Antimony Metal	13 mg/m ⁻
CAS: 10022-68-1	Cadmium Nitrate	2.1 mg/m
CAS: 12054-85-2	Ammonium Molybdate Tetrahydrate ACS Grade	30 mg/m ⁻
CAS: 87-69-4	L-Tartaric Acid	17 mg/m
CAS: 1336-21-6	Ammonium Hydroxide	160 ppm
<i>PAC-3:</i>	1	
CAS: 7697-37-2	Nitric Acid	92 ppm
CAS: 7784-27-2	Aluminum Nitrate	5,500 mg/n
CAS: 554-13-2	Lithium Carbonate	68 ppm
CAS: 13477-34-4	Calcium Nitrate Tetrahydrate	770 mg/m^3
CAS: 6156-78-1	Manganese Acetate Tetrahydrate	740 mg/m^3
CAS: 10196-18-6	,	1,800 mg/n
CAS: 19004-19-4		240 mg/m^3
CAS: 1314-62-1	Vanadium Pentoxide Reagent	70 mg/m^3
CAS: 7761-88-8	Silver Nitrate	5.4 mg/m^3
CAS: 10022-31-8	Barium Nitrate	2,100 mg/n
CAS: 10099-74-8	Lead Nitrate	1,100 mg/n
CAS: 7439-89-6		150 mg/m^3
	Magnesium	1,200 mg/n
CAS: 7439-95-4	_	99 mg/m³
CAS: 7439-95-4	Nickel Metal	// III / III
	Nickel Metal Tin Metal	
CAS: 7439-95-4 CAS: 7440-02-0	Tin Metal	400 mg/m ³
CAS: 7439-95-4 CAS: 7440-02-0 CAS: 7440-31-5 CAS: 7440-36-0	Tin Metal Antimony Metal	400 mg/m³ 80 mg/m³
CAS: 7439-95-4 CAS: 7440-02-0 CAS: 7440-31-5 CAS: 7440-36-0 CAS: 10022-68-1	Tin Metal Antimony Metal Cadmium Nitrate	400 mg/m³ 80 mg/m³ 13 mg/m³
CAS: 7439-95-4 CAS: 7440-02-0 CAS: 7440-31-5 CAS: 7440-36-0	Tin Metal Antimony Metal Cadmium Nitrate	400 mg/m³ 80 mg/m³

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 4)

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- 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 section 7.
- · Control parameters

Components with limit values that require monitoring at the workplace:

CAS: 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: (4) NIC-0.025 ppm

Long-term value: (2) ppm

NIC-A4

- · 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.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the

chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 6)

US

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 5)

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

· Relative density

· Evaporation rate

· Solubility in / Miscibility with

· Partition coefficient (n-octanol/water): Not determined.

· Vapor density

Water:



Tightly sealed goggles

· Body protection: Protective work clothing

9 Physical and chemical properties

Appearance:		
Form:	Liquid	
Color:	Clear to light colored	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value at 20 °C (68 °F):	<2	
Change in condition		
Melting point/Melting range:	0 °C (32 °F)	
Boiling point/Boiling range:	100 °C (212 °F)	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Decomposition temperature:	Not determined.	
Ignition temperature:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density at 20 °C (68 °F):	1.01403 g/cm³ (8.46208 lbs/gal)	

Not determined.

Not determined.

Not determined.

Fully miscible.

(Contd. on page 7)

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

		(Contd. of page
· Viscosity:	Not determined.	
Dynamic: Kinematic:	Not determined. Not determined.	
· Solvent content:		
Water:	96.5 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	0.0 %	
· Other information	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.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Inhalative LC50/4h 85.5 mg/l

- Primary irritant effect:
- on the skin: Strong caustic effect on skin and mucous membranes.
- · on the eye:

Strong caustic effect.

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: Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)		
CAS: 1314-62-1	Vanadium Pentoxide Reagent	2B
CAS: 10099-74-8	Lead Nitrate	2A
CAS: 7440-02-0	Nickel Metal	2B
CAS: 10022-68-1	Cadmium Nitrate	1
	(Contd on t	19 anna

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

		(Contd. of page 7)	
,	Toxicology Program)		
CAS: 10099-74-	8 Lead Nitrate	R	
CAS: 7440-02-0	Nickel Metal	R	
CAS: 10022-68-	l Cadmium Nitrate	K	
'	· OSHA-Ca (Occupational Safety & Health Administration)		
CAS: 10022-68-	l Cadmium Nitrate		

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 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pHvalue harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

- · 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.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

· UN-Number	
· DOT, IMDG, IATA	UN3264
· UN proper shipping name	
$\cdot DOT$	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitri Acid)

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 8)

	Transport	hazard	class	(es)	
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 \cdot **DOT**



· Class 6.1 Toxic substances

· Label

· IMDG, IATA



· Class 6.1 Toxic substances

· Label

· Packing group

· DOT, IMDG, IATA

· Environmental hazards: Not applicable.

· Special precautions for user Warning: Toxic substances

· Hazard identification number (Kemler code): 68 · EMS Number: F-A,S-B

· Segregation groups (SGG1a) Strong acids

· Stowage Category B

• Stowage Code SW2 Clear of living quarters.

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

. Transport in hulk according to Annay II of

· Transport/Additional information:

 \cdot **DOT**

Quantity limitations On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L

· IMDG

· Limited quantities (LQ) 100 ml · Excepted quantities (EQ) Code: E4

Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml

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

Not applicable.

(NITRIC ACID), 8, II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO $_3$

Sara		(Contd. of pag
~	mely hazardous substances):	
CAS: 7697-37-2 N		
CAS: 1314-62-1 V	Vanadium Pentoxide Reagent	
	ific toxic chemical listings):	
CAS: 7697-37-2	= '	
	Aluminum Nitrate	
	Chromium Nitrate Nonahydrate	
	Lithium Carbonate	
	Calcium Nitrate Tetrahydrate	
	Zinc Nitrate, Reagent Grade	
CAS: 1314-62-1	Vanadium Pentoxide Reagent	
	Silver Nitrate	
CAS: 10022-31-8		
CAS: 10022 31 8		
	Nickel Metal	
CAS: 7440-36-0		
CAS: 10022-68-1	•	
	Ammonium Hydroxide	
	stances Control Act):	
Water	mances control reg.	ACTIV
Nitric Acid		ACTIV
Lithium Carbonate		ACTIV
Vanadium Pentoxi		ACTIV
Silver Nitrate		ACTIV
Barium Nitrate		ACTIV
Lead Nitrate		ACTIV
Iron Metal		ACTIV
Magnesium		ACTIV
Nickel Metal		ACTIV
Tin Metal		ACTIV
Antimony Metal		ACTIV
L-Tartaric Acid		ACTIV
Ammonium Hydro.	xide	ACTIV
Hazardous Air Po	llutants	<u> </u>
CAS: 10099-74-8	Lead Nitrate	
CAS: 10022-68-1	Cadmium Nitrate	
Proposition 65		
Chemicals known	to cause cancer:	
CAS: 1314-62-1	Vanadium Pentoxide Reagent	
CAS: 10099-74-8	Lead Nitrate	
CAS: 7440-02-0	Nickel Metal	

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

CAS. 10022 60 1 Cadarian Nitrata	(Contd. of page 10)
CAS: 10022-68-1 Cadmium Nitrate Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
CAS: 554-13-2 Lithium Carbonate	

· Carcinogenic cate	egories	
· EPA (Environme	ntal Protection Agency)	
CAS: 10022-31-8	Barium Nitrate	D, CBD(inh), NL(oral)
CAS: 10099-74-8	Lead Nitrate	B2
· TLV (Threshold 1	Limit Value)	
CAS: 1314-62-1	Vanadium Pentoxide Reagent	A3
CAS: 10022-31-8 Barium Nitrate		A4
CAS: 10099-74-8	Lead Nitrate	A3
CAS: 7440-02-0	Nickel Metal	A5
· NIOSH-Ca (Natio	onal Institute for Occupational Safety and Health)	
CAS: 7440-02-0	Nickel Metal	
CAS: 10022-68-1	Cadmium Nitrate	
CHC lab al alam as	to The product is elegified and labeled according to	the Clobally Harmonized System (CHS)

[•] GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

[·] Hazard pictograms



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

Nitric Acid

· Hazard statements

Causes severe skin burns and eye damage.

· Precautionary statements

Do not breathe dusts or mists.

Wash thoroughly after handling.

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

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Store locked up.

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

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Trade name: Multi-Component Mixed AA Std. 10.0 ppm Each in 3.5% HNO₃

(Contd. of page 11)

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environment protection department.
- · Contact:

Date of Preparation / Last Revision:

· Date of preparation / last revision

Revision 1.2, 07-25-2024: Reviewed SDS for accuracy. STN/GW 07/25/2024 / 1.1

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

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

Skin Corrosion 1A: Skin corrosion/irritation – Category 1A Eye Damage 1: Serious eye damage/eye irritation – Category 1

* * Data compared to the previous version altered.

US