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Safety Data Sheet acc. to OSHA HCS

Printing date 02/19/2020 Reviewed on 08/05/2019

1 Identification

· Product identifier

· Trade name: Soil Solution B · Article number: CRM-SOIL-B

Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

High-Purity Standards

7221 Investment Drive, North Charleston, SC 29418 United States

Telephone: +1-843-767-7900 Fax: +1-843-767-7906 highpuritystandards.com

Email: info@highpuritystandards.com

· Information department: Product safety department

· Emergency telephone number:

INFOTRAC

Emergency telephone numbers 1-800-535-5053 Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

· Classification of the substance or mixture



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.

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

Eye Dam. 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



GHS05

- · Signal word Danger
- · Hazard-determining components of labeling: nitric acid
- · Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

· Precautionary statements

Keep only in original container.

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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.

Absorb spillage to prevent material damage.

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

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

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



Health = 3 Fire = 0 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 3 Fire = 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
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:	
7697-37-2 nitric acid	4.0%
· Chemical identification of the substance/preparation	
7732-18-5 water, distilled, conductivity or of similar purity	95.518%
7440-21-3 silicon	0.3%
7429-90-5 aluminium	0.07%
7439-89-6 iron	0.035%
7440-09-7 potassium	0.021%
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7440-70-2 calcium	0.0125%
7439-96-5 manganese	0.01%
7440-23-5 sodium	0.01%
7439-95-4 magnesium	0.008%
7440-66-6 zinc	0.007%
7439-92-1 lead	0.006%
7722-76-1 Ammonium dihydrogenphosphate	0.001%
7440-39-3 barium	0.0007%
7440-38-2 arsenic	0.0006%
7440-50-8 copper	0.0003%
7440-43-9 cadmium	0.00002%
7440-48-4 cobalt	0.000019
7440-47-3 chromium	0.000049
7440-02-0 nickel	0.000029
7440-36-0 antimony	0.000049
7440-29-1 thorium	0.000019
10102-06-4 Uranyl nitrate	0.0000255
7803-55-6 Ammonium Vanadate	0.000089

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.

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- · 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: 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

7697-37-2 nitric acid	0.16 ppm
7440-21-3 silicon	45 mg/m ³
7439-89-6 iron	3.2 mg/m^3
7440-09-7 potassium	2.3 mg/m ³
7439-96-5 manganese	3 mg/m^3
7440-23-5 sodium	13 mg/m³
7439-95-4 magnesium	18 mg/m^3
7440-66-6 zinc	6 mg/m³
7439-92-1 lead	0.15 mg/m
7722-76-1 Ammonium dihydrogenphosphate	17 mg/m^3
7440-39-3 barium	1.5 mg/m^3
7440-38-2 arsenic	1.5 mg/m ³
7440-50-8 copper	3 mg/m ³
7440-62-2 vanadium	3 mg/m^3
7440-36-0 antimony	1.5 mg/m^3
7440-47-3 chromium	1.5 mg/m ³
7440-61-1 uranium	0.6 mg/m^3
7440-02-0 nickel	4.5 mg/m^3
7440-43-9 cadmium	0.10 mg/m
7440-29-1 thorium	30 mg/m^3





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7440-48-4 cobalt	(Contd. of page 0.18 mg/n
PAC-2:	
7697-37-2 nitric acid	24 ppm
7440-21-3 silicon	100 mg/m
7439-89-6 iron	35 mg/m^3
7440-09-7 potassium	25 mg/m^3
7439-96-5 manganese	5 mg/m^3
7440-23-5 sodium	140 mg/m
7439-95-4 magnesium	200 mg/m
7440-66-6 zinc	21 mg/m^3
7439-92-1 lead	120 mg/m
7722-76-1 Ammonium dihydrogenphosphate	190 mg/m
7440-39-3 barium	180 mg/m
7440-38-2 arsenic	17 mg/m³
7440-50-8 copper	33 mg/m^3
7440-62-2 vanadium	5.8 mg/m^{3}
7440-36-0 antimony	13 mg/m³
7440-47-3 chromium	17 mg/m³
7440-61-1 uranium	5 mg/m ³
7440-02-0 nickel	50 mg/m^3
7440-43-9 cadmium	0.76 mg/n
7440-29-1 thorium	330 mg/m
7440-48-4 cobalt	2 mg/m ³
PAC-3:	
7697-37-2 nitric acid	92 ppm
7440-21-3 silicon	630 mg/m^3
7439-89-6 iron	150 mg/m^3
7440-09-7 potassium	150 mg/m^3
7439-96-5 manganese	1,800 mg/m
7440-23-5 sodium	870 mg/m³
7439-95-4 magnesium	1,200 mg/n
7440-66-6 zinc	120 mg/m³
7439-92-1 lead	700 mg/m^3
7722-76-1 Ammonium dihydrogenphosphate	1,100 mg/n
7440-39-3 barium	1,100 mg/n
7440-38-2 arsenic	100 mg/m^3
7440-50-8 copper	200 mg/m^3





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		(Contd. of page 5)
7440-62-2		35 mg/m ³
7440-36-0		80 mg/m³
7440-47-3	chromium	99 mg/m³
7440-61-1	uranium	30 mg/m³
7440-02-0	nickel	99 mg/m³
7440-43-9	cadmium	4.7 mg/m³
7440-29-1		$2,000 \text{ mg/m}^3$
7440-48-4	cobalt	20 mg/m³

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 item 7.
- · Control parameters

· Components with limit values that require monitoring at the workplace:

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

- · 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.

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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

· 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:



Tightly sealed goggles

9 Physical and chemical properties

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

Form: Liquid
Color: colorless
Odor: Characteristic
Odor threshold: Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range: Undetermined. **Boiling point/Boiling range:** 100 °C (212 °F)

• Flash point: Not applicable.

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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:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density at 20 °C (68 °F):	1.02958 g/cm³ (8.59185 lbs/gal)	
Bulk density:	$1,027 \text{ kg/m}^3$	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octanol/wate	er): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Water:	95.5 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	0.5 %	
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.

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11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · 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

	ernational Agency for Research on Cancer)	
7439-92-1	lead	2
7440-38-2	arsenic	Î
7440-47-3	chromium	Ĵ
7440-02-0	nickel	2
7440-43-9	cadmium	i
7440-29-1	thorium	İ
7440-48-4	cobalt	2
NTP (Nati	ional Toxicology Program)	
7439-92-1	lead	
7440-38-2	arsenic	
7440-02-0	nickel	
7440-43-9	cadmium	
7440-48-4	cobalt	
OSHA-Ca	(Occupational Safety & Health Administration)	
7440-38-2	arsenic	
7440-43-9	cadmium	

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.

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- · 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.

- · 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.

		ormai	

UN-Number	
DOT, ADR, IMDG, IATA	UN3264

· UN proper shipping name

• **DOT** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)

· ADR 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

(NITRIC ACID)

· IMDG, IATA CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC

ACID)

- · Transport hazard class(es)
- $\cdot DOT$



Class 8 Corrosive substances

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Label	8
ADR, IMDG, IATA	
Class	8 Corrosive substances
· Label	8
Packing group DOT, ADR, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
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 I MARPOL73/78 and the IBC Code	II of Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 5 L
2	On cargo aircraft only: 60 L
· ADR	
Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: 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. (NITRIC ACID), 8, III

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Sara	nvironmental regulations/legislation specific for the substance or mixture	
	ely hazardous substances):	
7697-37-2 nitric ac		
	ic toxic chemical listings):	
7697-37-2 nitric ac		
7429-90-5 aluminii		
7439-96-5 mangan	2SE	
7440-66-6 zinc		
7439-92-1 lead		
7440-39-3 barium		
7440-38-2 arsenic		
7440-50-8 copper		
7440-62-2 vanadiu		
7440-36-0 antimon		
7440-47-3 chromiu	m	
7440-02-0 nickel		
7440-43-9 cadmiun	1	
7440-48-4 cobalt		
TSCA (Toxic Subst	unces Control Act):	
All components have	the value ACTIVE.	
Hazardous Air Poll	utants	
7439-96-5 mangan		
7439-92-1 lead		
7440-48-4 cobalt		
Proposition 65		
Chemicals known to	cause cancer:	
7439-92-1 lead		
7440-38-2 arsenic		
7440-02-0 nickel		
7440-43-9 cadmiun	1	
7440-48-4 cobalt		
Chemicals known to	cause reproductive toxicity for females:	
7439-92-1 lead	1γγ. γ	





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7440-43-9	cadmium	(Contd. of page
Chemicals	known to cause developmental toxicity:	
7439-92-1	<u> </u>	
7440-43-9	cadmium	
Carcinoger	nic categories	
_	ronmental Protection Agency)	
	manganese	D
7440-66-6		D, I, II
7439-92-1	lead	B2
7440-39-3	barium	D, CBD(inh), NL(ore
7440-38-2	arsenic	A
7440-50-8	copper	D
7440-47-3		D
7440-43-9	cadmium	BI
TLV (Thre	shold Limit Value established by ACGIH)	
7429-90-5	aluminium	
7439-92-1	lead	1
7440-39-3	barium	
7440-38-2	arsenic	
7440-47-3	chromium	
7440-61-1	uranium	
7440-02-0	nickel	
7440-43-9	cadmium	_
7440-48-4	cobalt	
NIOSH-Ca	(National Institute for Occupational Safety and Hea	ulth)
7440-38-2	arsenic	
7440-61-1	uranium	
7440-02-0	nickel	
7440-43-9	cadmium	

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



· Signal word Danger

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Hazard-determining components of labeling:

nitric acid

· Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

· Precautionary statements

Keep only in original container.

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.

Absorb spillage to prevent material damage.

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

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

· 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:

High-Purity Standards Tel: 843-767-7900 Fax: 843-767-7906

- · Date of preparation / last revision 02/19/2020 / -
- · 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) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

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NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health

TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit

Met. Corr.1: Corrosive to metals – Category 1 Skin Corr. 1A: Skin corrosion/irritation – Category 1A Eye Dam. 1: Serious eye damage/eye irritation – Category 1