Printing date 01/05/2018 Reviewed on 01/05/2018

1 Identification

· Product identifier

· Trade name: ICP Tuning Standard

· Article number: SPX405

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier: Aqua Solutions, Inc. 6913 Highway 225 DEER PARK, TX 77536 USA

· Information department:

Technical Coordinator

800-256-2586

Sherman Nelson sherman@aquasolutions.org

· Emergency telephone number: Chemtrec: 800-424-9300 Canutec: 613-996-6666



2 Hazard(s) identification

· Classification of the substance or mixture



Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

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



GHS07

- · Signal word Warning
- · Hazard statements

Causes skin irritation.

Causes serious eye irritation.

· Precautionary statements

Wash thoroughly after handling.

Wear protective gloves / 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.

Specific treatment (see on this label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

(Contd. on page 2)

(Contd. of page 1)

Safety Data Sheet acc. to OSHA HCS

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· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 2 Fire = 0Reactivity = 0

· HMIS-ratings (scale 0 - 4)



- · 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 compo	onents:	
CAS: 7697-37-2	Nitric Acid	1.524%
· Table of Nonhaza	rdous Ingredients	
CAS: 7757-79-1	Potassium Nitrate	0.0127%
CAS: 7784-27-2	Aluminum Nitrate	0.0069%
CAS: 7789-02-8	Chromium Nitrate Nonahydrate	0.00377%
CAS: 10026-22-9	Cobalt Nitrate Hexahydrate	0.00247%
CAS: 10196-18-6	Zinc Nitrate, Reagent Grade	0.00225%
CAS: 6156-78-1	Manganese Acetate Tetrahydrate	0.0022%
CAS: 19004-19-4	Cupric Nitrate Hydrate	0.00185%
CAS: 10042-76-9	Strontium Nitrate	0.00119%
CAS: 10022-31-8	Barium Nitrate	0.000942%
CAS: 10099-74-8	Lead Nitrate	0.000787%
CAS: 7446-08-4	selenium dioxide	0.00069%
CAS: 12054-85-2	Ammonium Molybdate Tetrahydrate ACS Grade	0.0005%
CAS: 10022-68-1	Cadmium Nitrate	0.000495%
CAS: 7440-38-2	arsenic	0.000495%
CAS: 7440-02-0	Nickel Metal	0.000491%
CAS: 7732-18-5	Water	98.438%

4 First-aid measures

- · Description of first aid measures
- · 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.

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· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, 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 Not required.
- · 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).

· 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: 7757-79-1 Potassium Nitrate	9 mg/m³
CAS: 7784-27-2 Aluminum Nitrate	83 mg/m ³
CAS: 10026-22-9 Cobalt Nitrate Hexahydrate	0.3 mg/m^3
CAS: 10196-18-6 Zinc Nitrate, Reagent Grade	27 mg/m³
CAS: 6156-78-1 Manganese Acetate Tetrahydrate	13 mg/m³
CAS: 19004-19-4 Cupric Nitrate Hydrate	42 mg/m ³
CAS: 10042-76-9 Strontium Nitrate	$5.7 mg/m^3$
CAS: 10022-31-8 Barium Nitrate	2.9 mg/m^3
CAS: 10099-74-8 Lead Nitrate	0.24 mg/m^3
CAS: 7446-08-4 selenium dioxide	0.84 mg/m^3
CAS: 12054-85-2 Ammonium Molybdate Tetrahydrate ACS Grade	2.8 mg/m^3
CAS: 10022-68-1 Cadmium Nitrate	$0.27 mg/m^3$
CAS: 7440-38-2 arsenic	1.5 mg/m^3
CAS: 7440-02-0 Nickel Metal	$4.5 \ mg/m^3$
CAS: 1336-21-6 Ammonium Hydroxide	61 ppm

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DAC 2		(Contd. of page
PAC-2:		
	tric Acid	24 ppm
	tassium Nitrate	100 mg/m
	uminum Nitrate	920 mg/m
	balt Nitrate Hexahydrate	23 mg/m³
	nc Nitrate, Reagent Grade	300 mg/n
	anganese Acetate Tetrahydrate	22 mg/m³
CAS: 19004-19-4 Cı	*	150 mg/m
CAS: 10042-76-9 Sta		62 mg/m³
CAS: 10022-31-8 Ba	rium Nitrate	350 mg/m
CAS: 10099-74-8 Le	ad Nitrate	180 mg/n
CAS: 7446-08-4 see	lenium dioxide	1.6 mg/m
CAS: 12054-85-2 An	nmonium Molybdate Tetrahydrate ACS Grade	30 mg/m ³
CAS: 10022-68-1 Ca	ıdmium Nitrate	2.1 mg/m
CAS: 7440-38-2 ar	senic	17 mg/m ³
CAS: 7440-02-0 Ni	ckel Metal	50 mg/m ³
CAS: 1336-21-6 An	nmonium Hydroxide	330 ppm
PAC-3:		
CAS: 7697-37-2 Ni	tric Acid	92 ppm
CAS: 7757-79-1 Pe	tassium Nitrate	600 mg/m³
CAS: 7784-27-2 Al	uminum Nitrate	5,500 mg/n
CAS: 10026-22-9 Ca	balt Nitrate Hexahydrate	140 mg/m^3
CAS: 10196-18-6 Zii	nc Nitrate, Reagent Grade	1,800 mg/n
CAS: 6156-78-1 M	anganese Acetate Tetrahydrate	740 mg/m³
CAS: 19004-19-4 Cı	pric Nitrate Hydrate	240 mg/m³
CAS: 10042-76-9 Sta	ontium Nitrate	370 mg/m³
CAS: 10022-31-8 Ba	rium Nitrate	2,100 mg/n
CAS: 10099-74-8 Le	ad Nitrate	1,100 mg/n
CAS: 7446-08-4 sea	enium dioxide	9.5 mg/m³
CAS: 12054-85-2 An	nmonium Molybdate Tetrahydrate ACS Grade	180 mg/m³
CAS: 10022-68-1 Ca	· · · · · · · · · · · · · · · · · · ·	13 mg/m³
CAS: 7440-38-2 ar	senic	100 mg/m^3
CAS: 7440-02-0 Ni	ckel Metal	99 mg/m³
CAS: 1336-21-6 An	nmonium Hydroxide	2,300 ppm

7 Handling and storage

- · Handling:
- · Precautions for safe handling No special precautions are necessary if used correctly.
- · Information about protection against explosions and fires: No special measures required.
- · 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.

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- · 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:

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: 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.

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 and skin.

- · Breathing equipment: Not required.
- · 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

· **Body protection:** Protective work clothing

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Discovery of the desired successive	att.	
Physical and chemical proper	rties	
Information on basic physical and	chemical properties	
General Information		
Appearance:		
Form:	Liquid	
Color:	Colorless	
Odor:	Odorless Not determined.	
Odor threshold:		
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	83 °C (181.4 °F)	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Ignition temperature:		
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:	Not determined.	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible.	
Partition coefficient (n-octanol/wat	t er): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Water:	98.4 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gl	
Solids content:	0.0 %	
Other information	No further relevant information available.	

10 Stability and reactivity

- $\cdot \textit{Reactivity No further relevant information available}.$
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

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- · 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:
- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- · 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 (Internation	nal Agency for Research on Cancer)	
CAS: 10026-22-9	Cobalt Nitrate Hexahydrate	2B
CAS: 10099-74-8	Lead Nitrate	2A
CAS: 7446-08-4	selenium dioxide	3
CAS: 10022-68-1	Cadmium Nitrate	1
CAS: 7440-38-2	arsenic	1
CAS: 7440-02-0	Nickel Metal	2 <i>B</i>
· NTP (National To	oxicology Program)	
CAS: 10099-74-8	Lead Nitrate	R
CAS: 10022-68-1	Cadmium Nitrate	K
CAS: 7440-38-2	arsenic	K
CAS: 7440-02-0	Nickel Metal	R
· OSHA-Ca (Occup	national Safety & Health Administration)	
CAS: 7440-38-2 d	arsenic	

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.

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

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· Other adverse effects No further relevant information available.

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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.

Transport information	
UN-Number DOT, IMDG, IATA	UN1755
UN proper shipping name	
DOT	Chromic acid solution
IMDG, IATA	CHROMIC ACID SOLUTION
Transport hazard class(es)	
DOT	
CORROSIVE	
Class	8 Corrosive substances
Label	8
IMDG, IATA	
Class	8 Corrosive substances
Label	8
Packing group DOT, 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	E
Stowage Code	SW2 Clear of living quarters.

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	(Contd. of page
Segregation Code	SG6 Segregation as for class 5.1
	SG8 Stow "away from" class 4.1
	SG10 Stow "away from" class 5.1
	SG12 Stow "away from" class 7
Transport in bulk according to Annex II of	•
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L
~ ,	On cargo aircraft only: 60 L
· 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 1755 CHROMIC ACID SOLUTION, 8, III

15 Regulatory information

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

· Sara

CAS: 7697-37-2	Nitric Acid
Section 313 (Spec	ific toxic chemical listings):
CAS: 7697-37-2	Nitric Acid
CAS: 7757-79-1	Potassium Nitrate
CAS: 7784-27-2	Aluminum Nitrate
CAS: 7789-02-8	Chromium Nitrate Nonahydrate
CAS: 10026-22-9	Cobalt Nitrate Hexahydrate
CAS: 10196-18-6	Zinc Nitrate, Reagent Grade
CAS: 10042-76-9	Strontium Nitrate
CAS: 10022-31-8	Barium Nitrate
CAS: 10099-74-8	Lead Nitrate
CAS: 7446-08-4	selenium dioxide
CAS: 10022-68-1	Cadmium Nitrate
CAS: 7440-38-2	arsenic
CAS: 7440-02-0	Nickel Metal
CAS: 1336-21-6	Ammonium Hydroxide
TSCA (Toxic Sub	stances Control Act):
Nitric Acid	
Potassium Nitrate	
Strontium Nitrate	
Barium Nitrate	

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Lead Nitrate
selenium dioxide
arsenic
Nickel Metal
Ammonium Hydroxide
Water

- · TSCA new (21st Century Act) (Substances not listed)
- · Proposition 65

· Chemicals known to cause cancer:	
CAS: 10099-74-8	Lead Nitrate
CAS: 10022-68-1	Cadmium Nitrate
CAS: 7440-38-2	arsenic
CAS: 7440-02-0	Nickel Metal

· 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:

None of the ingredients is listed.

· Carcinogenic categories

cur cure genice cure	80.100				
· EPA (Environmental Protection Agency)					
CAS: 10022-31-8	Barium Nitrate	D, CBD(inh), NL(oral)			
CAS: 10099-74-8	Lead Nitrate	B2			
CAS: 7446-08-4	selenium dioxide	D			
CAS: 7440-38-2	arsenic	A			
· TLV (Threshold Limit Value established by ACGIH)					
CAS: 10022-31-8	Barium Nitrate	A4			
CAS: 10099-74-8	Lead Nitrate	A3			

CAS. 10022-31-0	Darium Iviirate	Λ7
CAS: 10099-74-8	Lead Nitrate	<i>A3</i>
CAS: 7440-38-2	arsenic	A1
CAS: 7440-02-0	Nickel Metal	A5
		$\overline{}$

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

CAS: 7440-38-2 arsenic CAS: 7440-02-0 Nickel Metal

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



- · Signal word Warning
- · Hazard statements

Causes skin irritation.

Causes serious eye irritation.

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· Precautionary statements

Wash thoroughly after handling.

Wear protective gloves / 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.

Specific treatment (see on this label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

· 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

Revision 0.0, 01-04-2016: Creation date for SDS. STN

01-05-2018: review SDS for accuracy. STN

01/05/2018 / -

· 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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

 $Skin\ Irrit.\ 2:\ Skin\ corrosion/irritation-Category\ 2$

Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A

US