

SAFETY DATA SHEET

ICV-7 Quality Control Standard, Part Number 190064900

Section 1. Identification

1.1 Product identifier

Product name : ICV-7 Quality Control Standard, Part Number 190064900
Part no. (chemical kit) : 190064900
Part no. : Initial calibration verification standard part A 190064900A
 Initial calibration verification standard part B 190064900B
Validation date : 4/25/2018

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

Material uses : Reagents and Standards for Analytical Chemistry Laboratory Use
 2 x 500 ml
 Initial calibration verification standard part A 500 ml
 Initial calibration verification standard part B 500 ml

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051, USA
 800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : Initial calibration verification standard part A This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Initial calibration verification standard part B This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Initial calibration verification standard part A

H290 CORROSIVE TO METALS - Category 1
 H330 ACUTE TOXICITY (inhalation) - Category 2
 H314 SKIN CORROSION - Category 1
 H318 SERIOUS EYE DAMAGE - Category 1
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2

Initial calibration verification standard part B

H290 CORROSIVE TO METALS - Category 1
 H330 ACUTE TOXICITY (inhalation) - Category 2
 H314 SKIN CORROSION - Category 1
 H318 SERIOUS EYE DAMAGE - Category 1
 H334 RESPIRATORY SENSITIZATION - Category 1
 H317 SKIN SENSITIZATION - Category 1
 H350 CARCINOGENICITY - Category 1A
 H360 TOXIC TO REPRODUCTION (Fertility) - Category 1A
 H360 TOXIC TO REPRODUCTION (Unborn child) - Category 1A
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2

Section 2. Hazards identification

Ingredients of unknown toxicity : Initial calibration verification standard part A
 Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10%

2.2 GHS label elements

Hazard pictograms : Initial calibration verification standard part A

Initial calibration verification standard part B



Signal word : Initial calibration verification standard part A
 Initial calibration verification standard part B

Danger

Danger

Hazard statements : Initial calibration verification standard part A

H290 - May be corrosive to metals.

H330 - Fatal if inhaled.

H314 - Causes severe skin burns and eye damage.

H373 - May cause damage to organs through prolonged or repeated exposure. (teeth)

H290 - May be corrosive to metals.

Initial calibration verification standard part B

H330 - Fatal if inhaled.

H314 - Causes severe skin burns and eye damage.

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 - May cause an allergic skin reaction.

H350 - May cause cancer.

H360 - May damage fertility or the unborn child.

H373 - May cause damage to organs through prolonged or repeated exposure. (teeth)

Precautionary statements

Prevention : Initial calibration verification standard part A

P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.

P284 - Wear respiratory protection.

P234 - Keep only in original container.

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

P260 - Do not breathe vapor.

P264 - Wash hands thoroughly after handling.

P201 - Obtain special instructions before use.

Initial calibration verification standard part B

P202 - Do not handle until all safety precautions have been read and understood.

P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.

P284 - Wear respiratory protection.

P234 - Keep only in original container.

P271 - Use only outdoors or in a well-ventilated

Section 2. Hazards identification

Response

: Initial calibration verification standard part A

Initial calibration verification standard part B

area.
 P260 - Do not breathe vapor.
 P264 - Wash hands thoroughly after handling.
 P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
 P390 - Absorb spillage to prevent material damage.

P314 - Get medical attention if you feel unwell.
 P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.
 P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.
 P305 + P351 + P338 + P310 - 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 or physician.
 P390 - Absorb spillage to prevent material damage.

P314 - Get medical attention if you feel unwell.
 P308 + P313 - IF exposed or concerned: Get medical attention.
 P304 + P341 (OSHA) + P310 - IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.
 P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or physician.
 P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.
 P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
 P333 + P313 - If skin irritation or rash occurs: Get medical attention.
 P305 + P351 + P338 + P310 - 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 or physician.

Section 2. Hazards identification

Storage	: Initial calibration verification standard part A	P405 - Store locked up.
	Initial calibration verification standard part B	P406 - Store in a corrosion resistant container with a resistant inner liner. P405 - Store locked up.
Disposal	: Initial calibration verification standard part A	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Initial calibration verification standard part B	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Initial calibration verification standard part A	Do not taste or swallow. Wash thoroughly after handling.
	Initial calibration verification standard part B	Do not taste or swallow. Wash thoroughly after handling.
2.3 Other hazards		
Hazards not otherwise classified	: Initial calibration verification standard part A	Causes digestive tract burns.
	Initial calibration verification standard part B	Causes digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture	: Initial calibration verification standard part A	Mixture
	Initial calibration verification standard part B	Mixture

Ingredient name	%	CAS number
Initial calibration verification standard part A		
nitric acid	≥10 - ≤18	7697-37-2
Calcium carbonate	≤3	471-34-1
Sodium carbonate	≤3	497-19-8
Potassium carbonate	≤1.8	584-08-7
Initial calibration verification standard part B		
nitric acid	≥10 - <20	7697-37-2
Antimony trioxide	≤0.3	1309-64-4
Diarsenic trioxide	≤0.3	1327-53-3
Lead	≤0.3	7439-92-1
Nickel	≤0.3	7440-02-0
Beryllium	≤0.3	7440-41-7
Cadmium	≤0.3	7440-43-9
Cobalt	≤0.3	7440-48-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	: Initial calibration verification standard part A	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
	Initial calibration verification standard part B	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	: Initial calibration verification standard part A	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Initial calibration verification standard part B	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Section 4. First aid measures

Skin contact

: Initial calibration verification standard part A

Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Initial calibration verification standard part B

Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Initial calibration verification standard part A

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Initial calibration verification standard part B

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

Eye contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Causes serious eye damage. Causes serious eye damage.
Inhalation	: Initial calibration verification standard part A Initial calibration verification standard part B	Fatal if inhaled. Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Causes severe burns. Causes severe burns. May cause an allergic skin reaction.
Ingestion	: Initial calibration verification standard part A Initial calibration verification standard part B	Corrosive to the digestive tract. Causes burns. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Adverse symptoms may include the following: pain watering redness Adverse symptoms may include the following: pain watering redness
Inhalation	: Initial calibration verification standard part A Initial calibration verification standard part B	No specific data. Adverse symptoms may include the following: wheezing and breathing difficulties asthma reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Adverse symptoms may include the following: pain or irritation redness blistering may occur Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Initial calibration verification standard part A Initial calibration verification standard part B	Adverse symptoms may include the following: stomach pains Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths

Section 4. First aid measures

skeletal malformations

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Initial calibration verification standard part A Initial calibration verification standard part B	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: Initial calibration verification standard part A Initial calibration verification standard part B	No specific treatment. No specific treatment.
Protection of first-aiders	: Initial calibration verification standard part A Initial calibration verification standard part B	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Initial calibration verification standard part A Initial calibration verification standard part B	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Initial calibration verification standard part A Initial calibration verification standard part B	None known. None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: Initial calibration verification standard part A Initial calibration verification standard part B	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
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Section 5. Fire-fighting measures

Hazardous thermal decomposition products	: Initial calibration verification standard part A	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides
	Initial calibration verification standard part B	
5.3 Advice for firefighters		
Special protective actions for fire-fighters	: Initial calibration verification standard part A	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Initial calibration verification standard part B	
Special protective equipment for fire-fighters	: Initial calibration verification standard part A	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Initial calibration verification standard part B	

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Initial calibration verification standard part A	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Initial calibration verification standard part B	
For emergency responders	: Initial calibration verification standard part A	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Initial calibration verification standard part B	

Section 6. Accidental release measures

6.2 Environmental precautions

: Initial calibration verification standard part A

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Initial calibration verification standard part B

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up

: Initial calibration verification standard part A

Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Initial calibration verification standard part B

Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures

: Initial calibration verification standard part A

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

Initial calibration verification standard part B

Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse

Section 7. Handling and storage

<p>Advice on general occupational hygiene</p>	<p>: Initial calibration verification standard part A</p> <p>Initial calibration verification standard part B</p>	<p>container. Absorb spillage to prevent material damage.</p> <p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
<p>7.2 Conditions for safe storage, including any incompatibilities</p>	<p>: Initial calibration verification standard part A</p> <p>Initial calibration verification standard part B</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p> <p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
<p>7.3 Specific end use(s)</p>		
<p>Recommendations</p>	<p>: Initial calibration verification standard part A Initial calibration verification standard part B</p>	<p>Industrial applications, Professional applications. Industrial applications, Professional applications.</p>
<p>Industrial sector specific solutions</p>	<p>: Initial calibration verification standard part A Initial calibration verification standard part B</p>	<p>Not applicable. Not applicable.</p>

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<p>Initial calibration verification standard part A nitric acid</p> <p>Calcium carbonate</p> <p>Sodium carbonate Potassium carbonate</p>	<p>ACGIH TLV (United States, 3/2017). TWA: 2 ppm 8 hours. TWA: 5.2 mg/m³ 8 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 2 ppm 8 hours. TWA: 5 mg/m³ 8 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 2 ppm 10 hours. TWA: 5 mg/m³ 10 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 2 ppm 8 hours. TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total None. None.</p>
<p>Initial calibration verification standard part B nitric acid</p> <p>Antimony trioxide</p>	<p>ACGIH TLV (United States, 3/2017). TWA: 2 ppm 8 hours. TWA: 5.2 mg/m³ 8 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 2 ppm 8 hours. TWA: 5 mg/m³ 8 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 2 ppm 10 hours. TWA: 5 mg/m³ 10 hours. STEL: 4 ppm 15 minutes. STEL: 10 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 2 ppm 8 hours. TWA: 5 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2017). TWA: 0.5 mg/m³, (as Sb) 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 0.5 mg/m³, (as Sb) 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 0.5 mg/m³, (as Sb) 10 hours.</p> <p>OSHA PEL (United States, 6/2016).</p>

Section 8. Exposure controls/personal protection

Diarsenic trioxide	<p>TWA: 0.5 mg/m³, (as Sb) 8 hours. ACGIH TLV (United States, 3/2017). TWA: 0.01 mg/m³, (as As) 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 10 µg/m³, (as As) 8 hours. NIOSH REL (United States, 10/2016). CEIL: 0.002 mg/m³, (as As) 15 minutes. OSHA PEL (United States, 6/2016). TWA: 10 µg/m³, (as As) 8 hours.</p>
Lead	<p>ACGIH TLV (United States, 3/2017). TWA: 0.05 mg/m³, (as Pb) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m³ 8 hours. OSHA PEL (United States, 6/2016). TWA: 50 µg/m³, (as Pb) 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 50 µg/m³, (as Pb) 8 hours.</p>
Nickel	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³, (as Ni) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.015 mg/m³, (as Ni) 10 hours. ACGIH TLV (United States, 3/2017). TWA: 1.5 mg/m³ 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2016). TWA: 1 mg/m³, (as Ni) 8 hours.</p>
Beryllium	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 2 µg/m³, (as Be) 8 hours. CEIL: 5 µg/m³, (as Be) AMP: 25 µg/m³, (as Be) 30 minutes. OSHA PEL Z2 (United States, 2/2013). TWA: 2 mg/m³ 8 hours. CEIL: 5 mg/m³ AMP: 25 mg/m³ 30 minutes. NIOSH REL (United States, 10/2016). CEIL: 0.0005 mg/m³, (as Be) ACGIH TLV (United States, 3/2017). Inhalation sensitizer. TWA: 0.00005 mg/m³, (as Be) 8 hours. Form: Inhalable fraction</p>
Cadmium	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 5 µg/m³ 8 hours. TWA: 0.2 mg/m³, (as Cd) 8 hours. Form: Dust CEIL: 0.6 mg/m³, (as Cd) Form: Dust TWA: 0.1 mg/m³, (as Cd) 8 hours. Form: Fume CEIL: 0.3 mg/m³, (as Cd) Form: Fume OSHA PEL Z2 (United States, 2/2013). TWA: 0.2 mg/m³ 8 hours. Form: Dust CEIL: 0.6 mg/m³ Form: Dust TWA: 0.1 mg/m³ 8 hours. Form: Fume CEIL: 0.3 mg/m³ Form: Fume OSHA PEL (United States, 6/2016). TWA: 5 µg/m³, (as Cd) 8 hours. ACGIH TLV (United States, 3/2017). TWA: 0.01 mg/m³, (as Cd) 8 hours. Form: Inhalable fraction</p>

Section 8. Exposure controls/personal protection

Cobalt	<p>TWA: 0.002 mg/m³, (as Cd) 8 hours. Form: Respirable fraction ACGIH TLV (United States, 3/2017). TWA: 0.02 mg/m³, (as Co) 8 hours. TWA: 0.005 mg/m³ 8 hours. Form: Thoracic fraction OSHA PEL 1989 (United States, 3/1989). TWA: 0.05 mg/m³, (as Co) 8 hours. OSHA PEL (United States, 6/2016). TWA: 0.1 mg/m³, (as Co) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m³, (as Co) 10 hours. Form: Dust and fumes</p>
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8.2 Exposure controls

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Initial calibration verification standard part A	Liquid. [Clear.]
	: Initial calibration verification standard part B	Liquid. [Clear.]
Color	: Initial calibration verification standard part A	Light
	: Initial calibration verification standard part B	Light
Odor	: Initial calibration verification standard part A	Odorless.
	: Initial calibration verification standard part B	Odorless.
Odor threshold	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
pH	: Initial calibration verification standard part A	<2
	: Initial calibration verification standard part B	<2
Melting point	: Initial calibration verification standard part A	0°C (32°F)
	: Initial calibration verification standard part B	0°C (32°F)
Boiling point	: Initial calibration verification standard part A	100°C (212°F)
	: Initial calibration verification standard part B	100°C (212°F)
Flash point	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Evaporation rate	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Flammability (solid, gas)	: Initial calibration verification standard part A	Not applicable.
	: Initial calibration verification standard part B	Not applicable.
Lower and upper explosive (flammable) limits	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Vapor pressure	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Vapor density	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.

Section 9. Physical and chemical properties

Relative density	: Initial calibration verification standard part A	1
	: Initial calibration verification standard part B	1
Solubility	: Initial calibration verification standard part A	Easily soluble in the following materials: cold water and hot water.
	: Initial calibration verification standard part B	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Auto-ignition temperature	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Decomposition temperature	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.
Viscosity	: Initial calibration verification standard part A	Not available.
	: Initial calibration verification standard part B	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: Initial calibration verification standard part A	No specific test data related to reactivity available for this product or its ingredients.
	: Initial calibration verification standard part B	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Initial calibration verification standard part A	The product is stable.
	: Initial calibration verification standard part B	The product is stable.
10.3 Possibility of hazardous reactions	: Initial calibration verification standard part A	Under normal conditions of storage and use, hazardous reactions will not occur.
	: Initial calibration verification standard part B	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Initial calibration verification standard part A	No specific data.
	: Initial calibration verification standard part B	No specific data.
10.5 Incompatible materials	: Initial calibration verification standard part A	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals
	: Initial calibration verification standard part B	Attacks many metals producing extremely flammable hydrogen gas which can form explosive

Section 10. Stability and reactivity

mixtures with air.
Reactive or incompatible with the following materials:
alkalis
metals

10.6 Hazardous decomposition products

: Initial calibration verification standard part A

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Initial calibration verification standard part B

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Initial calibration verification standard part A nitric acid	LC50 Inhalation Vapor	Rat	2500 ppm	1 hours
	LC50 Inhalation Vapor	Rat	130 mg/m ³	4 hours
Calcium carbonate	LD50 Oral	Rat	6450 mg/kg	-
Sodium carbonate	LD50 Oral	Rat	4090 mg/kg	-
Potassium carbonate	LD50 Oral	Rat	1870 mg/kg	-
Initial calibration verification standard part B nitric acid	LC50 Inhalation Vapor	Rat	2500 ppm	1 hours
	LC50 Inhalation Vapor	Rat	130 mg/m ³	4 hours
Antimony trioxide	LD50 Oral	Rat	>20 g/kg	-
Diarsenic trioxide	LD50 Oral	Rat	10 mg/kg	-
Nickel	LD50 Oral	Rat	>9000 mg/kg	-
Cobalt	LC50 Inhalation Dusts and mists	Rat - Male, Female	<0.05 mg/l	4 hours
	LD50 Oral	Rat	550 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Initial calibration verification standard part A Sodium carbonate	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Initial calibration verification standard part B Antimony trioxide	Eyes - Mild irritant	Rabbit	-	100 milligrams	-

Sensitization

Not available.

Section 11. Toxicological information

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Initial calibration verification standard part B			
Antimony trioxide	-	2B	-
Diarsenic trioxide	+	1	Known to be a human carcinogen.
Lead	-	2B	Reasonably anticipated to be a human carcinogen.
Nickel	-	2B	Reasonably anticipated to be a human carcinogen.
Beryllium	-	1	Known to be a human carcinogen.
Cadmium	+	1	Known to be a human carcinogen.
Cobalt	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Initial calibration verification standard part A nitric acid	Category 3	Not applicable.	Respiratory tract irritation
Potassium carbonate	Category 3	Not applicable.	Respiratory tract irritation
Initial calibration verification standard part B nitric acid	Category 3	Not applicable.	Respiratory tract irritation
Beryllium	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Initial calibration verification standard part A nitric acid	Category 2	Not determined	teeth
Initial calibration verification standard part B nitric acid	Category 2	Not determined	teeth
Antimony trioxide	Category 2	Not determined	cardiovascular system and lungs
Diarsenic trioxide	Category 2	Not determined	blood system, cardiovascular system, central nervous system (CNS), heart, immune system, kidneys, liver, lungs, lymphatic system and muscle tissue

Section 11. Toxicological information

Lead	Category 1	Not determined	blood system, cardiovascular system, immune system, kidneys and nervous system
Nickel Beryllium Cadmium	Category 1 Category 1 Category 1	Inhalation Inhalation Not determined	respiratory tract lungs bones, kidneys and lungs

Aspiration hazard

Not available.

Information on the likely routes of exposure	: Initial calibration verification standard part A Initial calibration verification standard part B	Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation.
Potential acute health effects		
Eye contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Causes serious eye damage. Causes serious eye damage.
Inhalation	: Initial calibration verification standard part A Initial calibration verification standard part B	Fatal if inhaled. Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Causes severe burns. Causes severe burns. May cause an allergic skin reaction.
Ingestion	: Initial calibration verification standard part A Initial calibration verification standard part B	Corrosive to the digestive tract. Causes burns. Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Initial calibration verification standard part A Initial calibration verification standard part B	Adverse symptoms may include the following: pain watering redness Adverse symptoms may include the following: pain watering redness
Inhalation	: Initial calibration verification standard part A Initial calibration verification standard part B	No specific data. Adverse symptoms may include the following: wheezing and breathing difficulties asthma reduced fetal weight increase in fetal deaths skeletal malformations

Section 11. Toxicological information

Skin contact	: Initial calibration verification standard part A	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	: Initial calibration verification standard part B	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Initial calibration verification standard part A	Adverse symptoms may include the following: stomach pains
	: Initial calibration verification standard part B	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: Initial calibration verification standard part A Initial calibration verification standard part B	May cause damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: Initial calibration verification standard part A Initial calibration verification standard part B	No known significant effects or critical hazards. May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: Initial calibration verification standard part A Initial calibration verification standard part B	No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: Initial calibration verification standard part A Initial calibration verification standard part B	No known significant effects or critical hazards. May damage the unborn child.
Developmental effects	: Initial calibration verification standard part A Initial calibration verification standard part B	No known significant effects or critical hazards. No known significant effects or critical hazards.

Section 11. Toxicological information

Fertility effects	: Initial calibration verification standard part A Initial calibration verification standard part B	No known significant effects or critical hazards. May damage fertility.
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Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Initial calibration verification standard part A	
Oral	97679.4 mg/kg
Inhalation (vapors)	1.3 mg/l
Inhalation (dusts and mists)	16.11 mg/l
Initial calibration verification standard part B	
Inhalation (vapors)	1.3 mg/l
Inhalation (dusts and mists)	16.11 mg/l

Other information	: Initial calibration verification standard part A Initial calibration verification standard part B	Not available. Adverse symptoms may include the following: Sensitization (Respiratory / Skin).
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Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Initial calibration verification standard part A			
nitric acid	Acute LC50 180000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
Calcium carbonate	Acute LC50 72 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 >56000 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Chronic NOEC 61 mg/g Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	28 days
Sodium carbonate	Acute EC50 242000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute LC50 176000 µg/l Fresh water	Crustaceans - Amphipoda	48 hours
	Acute LC50 265000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 300000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Potassium carbonate	Acute LC50 630 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 650 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
Initial calibration verification standard part B			
nitric acid	Acute LC50 180000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
Antimony trioxide	Acute LC50 72 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute EC50 730 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 740 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 560 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours

Section 12. Ecological information

Diarsenic trioxide	Acute EC50 423450 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 >530 mg/l Fresh water	Fish - Lepomis macrochirus - Young of the year	96 hours
	Chronic NOEC 200 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 34.7 mg/l Fresh water	Algae - Scenedesmus subspicatus	72 hours
	Acute EC50 2.5 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 3380 µg/l Marine water	Fish - Terapon jarbua - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic EC10 9.4 mg/l Fresh water	Algae - Scenedesmus subspicatus	72 hours
Lead	Chronic IC10 1.3 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 0.594 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.03 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
	Acute EC50 2 ppm Marine water	Algae - Macrocystis pyrifera - Young	4 days
Nickel	Acute EC50 450 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 1000 µg/l Marine water	Daphnia - Daphnia magna	48 hours
	Acute IC50 0.31 mg/l Marine water	Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 47.5 ng/L Fresh water	Fish - Heteropneustes fossilis	96 hours
	Chronic NOEC 100 mg/l Marine water	Algae - Glenodinium halli	72 hours
Beryllium	Chronic NOEC 3.5 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
	Acute LC50 1000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 37.9 mg/l Fresh water	Fish - Pimephales promelas	96 hours
Cadmium	Acute EC50 97 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute EC50 0.095 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 200 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
Cobalt	Acute EC50 13.5 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 1 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 2 µg/l Fresh water	Algae - Parachlorella kessleri - Exponential growth phase	72 hours
	Chronic NOEC 0.02 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
	Acute LC50 4400 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 3.4 mg/l Fresh water	Fish - Pimephales promelas	96 hours

[12.2 Persistence and degradability](#)

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Initial calibration verification standard part A nitric acid	-	-	Readily
Initial calibration verification standard part B nitric acid	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Initial calibration verification standard part A nitric acid	-0.21	-	low
Initial calibration verification standard part B nitric acid	-0.21	-	low
Diarsenic trioxide	-	0.143	low
Cobalt	-	15600	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods






Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3264	UN3264	UN3264	UN3264	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O. S. (nitric acid)	LIQUIDO CORROSIVO, ACIDO, INORGANICO, N. E.P. (nitric acid)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O. S. (nitric acid)	Corrosive liquid, acidic, inorganic, n. o.s. (nitric acid)
Transport hazard class(es)	8 	8 	8 	8 	8 
Packing group	III	III	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

DOT Classification

- : **Reportable quantity** 2000 lbs / 908 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- Limited quantity** Yes.
- Packaging instruction** Exceptions: 154. Non-bulk: 203. Bulk: 241.
- Quantity limitation** Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
- Special provisions** IB3, T7, TP1, TP28

TDG Classification

- : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.
- Explosive Limit and Limited Quantity Index** 5
- Passenger Carrying Road or Rail Index** 5
- Special provisions** 16

Mexico Classification

- : **Special provisions** 223, 274

IMDG

- : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- Emergency schedules** F-A, S-B
- Special provisions** 223, 274

IATA

- : The environmentally hazardous substance mark may appear if required by other transportation regulations.
- Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 852. Cargo Aircraft Only: 60 L. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841.
- Special provisions** A3, A803

- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

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

- U.S. Federal regulations** : TSCA 6 proposed risk management: Lead
 TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: Chromium(III) nitrate, nonahydrate (1:3:9); Antimony trioxide; Diarsenic trioxide; Lead; Nickel; Silver; Thallium; Beryllium; Cadmium; Copper; Zinc; Selenium
Clean Water Act (CWA) 311: nitric acid; Antimony trioxide; Diarsenic trioxide
Clean Air Act (CAA) 112 regulated toxic substances: nitric acid
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed
- Clean Air Act Section 602 Class I Substances** : Not listed
- Clean Air Act Section 602 Class II Substances** : Not listed
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Initial calibration verification standard part A nitric acid	≥10 - ≤18	Yes.	1000	85.7	1000	85.7
Initial calibration verification standard part B nitric acid Diarsenic trioxide	≥10 - <20 ≤0.3	Yes. Yes.	1000 100 / 10000	85.7 -	1000 1	85.7 -

SARA 304 RQ : 2000 lbs / 908 kg

SARA 311/312

- Classification** : **Initial calibration verification standard part A** CORROSIVE TO METALS - Category 1
 ACUTE TOXICITY (inhalation) - Category 2
 SKIN CORROSION - Category 1
 SERIOUS EYE DAMAGE - Category 1
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2
 HNOC - Corrosive to digestive tract
 CORROSIVE TO METALS - Category 1
- Initial calibration verification standard part B**
 ACUTE TOXICITY (inhalation) - Category 2
 SKIN CORROSION - Category 1

Section 15. Regulatory information

SERIOUS EYE DAMAGE - Category 1
 RESPIRATORY SENSITIZATION - Category 1
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 1A
 TOXIC TO REPRODUCTION (Fertility) - Category 1A
 TOXIC TO REPRODUCTION (Unborn child) - Category 1A
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2
 HNOC - Corrosive to digestive tract

Composition/information on ingredients

Name	%	Classification
Initial calibration verification standard part A		
nitric acid	≥10 - ≤18	OXIDIZING LIQUIDS - Category 2 CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (inhalation) - Category 1 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2 HNOC - Corrosive to digestive tract
Calcium carbonate	≤3	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
Sodium carbonate	≤3	EYE IRRITATION - Category 2A
Potassium carbonate	≤1.8	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Magnesium	≤3	SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 3
Initial calibration verification standard part B		
nitric acid	≥10 - <20	OXIDIZING LIQUIDS - Category 2 CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (inhalation) - Category 1 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2 HNOC - Corrosive to digestive tract
Antimony trioxide	≤0.3	EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, lungs) - Category 2
Diarsenic trioxide	≤0.3	ACUTE TOXICITY (oral) - Category 2 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, cardiovascular system, central nervous system (CNS), heart, immune system, kidneys, liver, lungs, lymphatic system, muscle tissue) - Category 2 HNOC - Corrosive to digestive tract
Lead	≤0.3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION (Fertility) - Category 1A TOXIC TO REPRODUCTION (Unborn child) - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, cardiovascular system, immune system, kidneys, nervous system) - Category 1
Nickel	≤0.3	SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract) (inhalation) - Category 1

Section 15. Regulatory information

Beryllium	≤0.3	FLAMMABLE SOLIDS - Category 1 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY (inhalation) - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) (inhalation) - Category 1
Cadmium	≤0.3	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (inhalation) - Category 2 GERM CELL MUTAGENICITY - Category 2 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bones, kidneys, lungs) - Category 1
Cobalt	≤0.3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 1 RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Initial calibration verification standard part A nitric acid	7697-37-2	≥10 - ≤18
	Initial calibration verification standard part B nitric acid	7697-37-2	≥10 - <20
	Antimony trioxide	1309-64-4	≤0.3
	Diarsenic trioxide	1327-53-3	≤0.3
	Lead	7439-92-1	≤0.3
	Nickel	7440-02-0	≤0.3
	Beryllium	7440-41-7	≤0.3
	Cadmium	7440-43-9	≤0.3
	Cobalt	7440-48-4	≤0.3
	Supplier notification	Initial calibration verification standard part A nitric acid	7697-37-2
Initial calibration verification standard part B nitric acid		7697-37-2	≥10 - <20
Antimony trioxide		1309-64-4	≤0.3
Diarsenic trioxide		1327-53-3	≤0.3
Lead		7439-92-1	≤0.3
Nickel		7440-02-0	≤0.3
Beryllium		7440-41-7	≤0.3
Cadmium		7440-43-9	≤0.3
Cobalt		7440-48-4	≤0.3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: NITRIC ACID
- New York** : The following components are listed: Nitric acid
- New Jersey** : The following components are listed: NITRIC ACID; CHROMIUM COMPOUNDS
- Pennsylvania** : The following components are listed: NITRIC ACID; CHROMIUM COMPOUNDS
- California Prop. 65**

Section 15. Regulatory information

⚠ WARNING: This product can expose you to chemicals including Lead, Cadmium, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Antimony oxide, Arsenic (inorganic arsenic compounds), Nickel, Beryllium, Cobalt metal powder, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Initial calibration verification standard part B		
Antimony oxide	-	-
Arsenic (inorganic arsenic compounds)	Yes.	-
Lead	Yes.	Yes.
Nickel	-	-
Beryllium	Yes.	-
Cadmium	Yes.	Yes.
Cobalt metal powder	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Initial calibration verification standard part B		
Lead (Pb)	Heavy metals - Annex 1	Listed
Cadmium (Cd)	Heavy metals - Annex 1	Listed

Inventory list

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Other information

History

Date of issue : 04/25/2018
Date of previous issue : 05/10/2016
Version : 4

Procedure used to derive the classification

Classification	Justification
Initial calibration verification standard part A CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2	Expert judgment Calculation method On basis of test data On basis of test data Calculation method
Initial calibration verification standard part B CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION (Fertility) - Category 1A TOXIC TO REPRODUCTION (Unborn child) - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (teeth) - Category 2	Expert judgment Calculation method On basis of test data On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

 Indicates information that has changed from previously issued version.

Notice to reader

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