SAFETY DATA SHEET

INHIBITOR AZ8104

1. Chemical product and company identification

Product name **INHIBITOR AZ8104**

Recommended use and Limitations on use

Recommended use Water-based corrosion inhibitor

Company/undertaking identification

PT SUEZ WATER TECHNOLOGIES AND SOLUTIONS INDONESIA
South Quarter, Tower A, 18th Floor
Unit F-G, Jl. RA Kartini Kav 8, Cilandak Barat
Jakarta Selatan 12430, Indonesia
Tel: +62 21 80669678

Emergency telephone

001-803-017-9114 (Indonesia)

+1 703-527-3887 (US)

2. Hazards identification

GHS classification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements

Pictogram

Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection. Do not breathe dust/fume/gas/mist/vapours/spray.

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Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Rinse skin with water/shower. 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: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Rinse cautiously with water for several minutes. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material damage. IF ON SKIN (or hair): If skin irritation or rash occurs: IF SWALLOWED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Storage	Store in a dry place. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental information	None.

3. Composition / information on ingredients

Substance or mixture Mixtures

Chemical property

Chemical name	CAS Number	Concentration (%)
Chlorotolyltriazole sodium salt	202420-04-0	10 - 30
DICHLOROTOLYLTRIAZOLE	NOT ASSIGNED	3 - 7
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	<= 5
Sodium hydroxide	1310-73-2	<= 5

4. First aid measures

First aid measures for different exposure routes

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and effects	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Prolonged exposure may cause chronic effects.
Personal protection for first-aid responders	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.
Notes to physician	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials.
Protection of fire-fighters	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

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6. Accidental release measures

Personal precautions

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Spill clean-up methods

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Technical measures

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Local and general ventilation

Provide adequate ventilation.

Precautions

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Wear appropriate personal protective equipment. Avoid release to the environment.

Safe handling advice

Avoid prolonged exposure. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.

Storage

Technical measures

Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

Suitable storage conditions

Store locked up. Store in a cool, dry place out of direct sunlight. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

Incompatible materials

Metals. For further information, please refer to section 10 of the SDS.

Safe packaging materials

Store in corrosive resistant container with a resistant inner liner.

8. Exposure controls/personal protection

Exposure limits

Indonesia. OELs (Minister of Manpower and Transmigration Regulation No. Per.13/MEN/X/2011 concerning Threshold Limit Values, Annex II)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

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Personal protective equipment

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Wear appropriate chemical resistant gloves.
Eye protection	Wear safety glasses with side shields (or goggles) and a face shield.
Skin and body protection	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Not available.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH (concentrated product)	12.7
pH in aqueous solution	11.6 (5% SOL.)
pH	Not available.
Melting point/freezing point	-11 °C
Boiling point, initial boiling point, and boiling range	99 °C
Flash point	Not available.
Auto-ignition temperature	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	21 °C
Vapor density	< 1 (Air = 1)
Evaporation rate	< 1 (Ether = 1)
Relative density	1.13
Relative density temperature	21 °C
Density	Not available.
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Decomposition temperature	Not available.
Viscosity	5 cps
Viscosity temperature	21 °C
Pour point	-8 °C

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Other data

Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	1.132
VOC (Weight %)	0 % (Estimated)

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Stability	Not available.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity

Product	Species	Test Results
INHIBITOR AZ8104 (CAS Mixture)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
DICHLOROTOLYLTRIAZOLE (CAS NOT ASSIGNED)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
Sodium 4(or 5)-methyl-1H-benzotriazolide (CAS 64665-57-2)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	735 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rabbit	> 500 mg/kg

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

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Symptoms	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer. This product is not expected to cause respiratory sensitization.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not available.
Toxic to reproduction	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard. Based on available data, the classification criteria are not met.
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.
Other information	Not available.

12. Ecological information

Ecotoxicological data

Product		Species	Test Results
INHIBITOR AZ8104 (CAS Mixture)			
	LC50	Annelida(Lumbriculus variegatus)	138 mg/L, Static Acute Bioassay, 96 hour
		Benthic Crustacean(Gammerus pseutolimnaeus)	42.1 mg/L, Static Acute Bioassay, 96 hour
		Bluegill Sunfish	36.6 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	124 mg/L, Static Renewal Bioassay, 48 hour
		Fathead Minnow	135 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
			50.7 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
		Freshwater Snail(Physa sp.)	47.4 mg/L, Static Acute Bioassay, 96 hour
		Menidia beryllina (Silversides)	41 mg/L, Static Acute Bioassay, 96 hour
		Midge larvae (Chironomus tentans)	95.8 mg/L, Static Acute Bioassay, 96 hour
		Mysid Shrimp	53 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
		Sheepshead Minnow	132 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
	LOEL	Ceriodaphnia	40 mg/L, Chronic Bioassay, 7 day
		Fathead Minnow	8.3 mg/L, Chronic Flow-Thru Bioassay, 28 day, (pH adjusted)
	NOEL	Annelida(Lumbriculus variegatus)	62.5 mg/L, Static Acute Bioassay, 96 hour

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Product		Species	Test Results
		Benthic Crustacean(Gammerus pseutolimnaeus)	25 mg/L, Static Acute Bioassay, 96 hour
		Bluegill Sunfish	25 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	75 mg/L, Static Renewal Bioassay, 48 hour
			20 mg/L, Chronic Bioassay, 7 day
		Fathead Minnow	21.8 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
			15 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
			4.2 mg/L, Chronic Flow-Thru Bioassay, 28 day, (pH adjusted)
		Freshwater Snail(Physa sp.)	25 mg/L, Static Acute Bioassay, 96 hour
		Menidia beryllina (Silversides)	25 mg/L, Static Acute Bioassay, 96 hour
		Midge larvae (Chironomus tentans)	62.5 mg/L, Static Acute Bioassay, 96 hour
		Mysid Shrimp	25 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
		Sheepshead Minnow	100 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
Other	EC50	Pseudokirchnerella subcapitata	132 mg/l, 96 Hours
Aquatic			
Crustacea	EC0	Daphnia magna	155 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
	EC50	Daphnia magna	210 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
			50 mg/L, Chronic Bioassay, 21 day, (pH adjusted)
	LC50	Daphnia magna	217 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	148 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
			27 mg/L, Chronic Bioassay, 21 day, (pH adjusted)
Fish	LC50	Rainbow Trout	15.4 mg/L, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	6.3 mg/L, Static Renewal Bioassay, 96 hour

Components		Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)			
Aquatic			
Algae	EbC50	Algae	6.84 mg/l
	ErC50	Algae	18.6 mg/l

Ecotoxicity Harmful to aquatic life with long lasting effects.

Bioaccumulation No data available.

Mobility in soil No data available for this product.

Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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Environmental fate Harmful to aquatic life with long lasting effects.

Persistence and degradability

13. Disposal considerations

Local disposal regulations Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport information

IATA

- **UN number** UN1760
- **UN proper shipping name** Corrosive liquid, n.o.s. (SODIUM HYDROXIDE, HALOGENATED AROMATIC HETEROCYCLE)
- **Transport hazard class(es)**
  - **Class** 8
  - **Subsidiary risk** -
- **Packing group** II
- **Environmental hazards** No.
- **ERG Code** 154
- **Special precautions for user** Not available.

IMDG

- **UN number** UN1760
- **UN proper shipping name** CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE, HALOGENATED AROMATIC HETEROCYCLE)
- **Transport hazard class(es)**
  - **Class** 8
  - **Subsidiary risk** -
- **Packing group** II
- **Environmental hazards**
  - **Marine pollutant** No.
- **EmS** F-A, S-B
- **Special precautions for user** Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

IATA; IMDG

15. Regulatory information

Applicable regulations

Additional information is given in the Safety Data Sheet.

CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon)

Not regulated.

CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon, March 10, 2008)

Not regulated.

Dangerous Substances that Must be Registered (Regulation of the Minister of Health of the Republic of Indonesia)

Not regulated.

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Import and Distribution Control of Hazardous Materials (Minister of Trade Regulation No. 75/M-DAG/PER/10/2014, Annex I)

Not listed.

Precursor Chemicals (Ministry of Industry and Trade Decree No. 647/MPP/Kep/10/2004 concerning Regulation on Import of Precursors, Attachment 1)

Not regulated.

Prohibited Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 1)

Not regulated.

Restricted Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 2)

Not regulated.

Toxic and Hazardous Materials List (Decree of the Ministry of Industry on the Safeguarding of Toxic and Hazardous Materials in Industrial Plants, No. 148/M/SK/4/1985)

Sodium hydroxide (CAS 1310-73-2)

Hazardous Substances Approved for Use (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment I)

Listed substances

Sodium hydroxide (CAS 1310-73-2)

Listed substances / Allowed until 2040

Not regulated.

NSF Registered and/or meets USDA (according to 1998 guidelines):	Registration No. – 141530 Category Code(s): G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact

16. Other information

Issued by	Not available.
Disclaimer	Not available.
Issue date	Sep-29-2013
Revision date	26/09/2018
Legend to abbreviations and acronyms used in the SDS	Not available.
References and sources for data used to compile the SDS	Not available.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.