Kamco Limited
MATERIAL SAFETY DATA SHEET

ZNI BOOSTER INHIBITOR

Revision date: 22/09/2015

Section 1: Identification of the substance/mixture and of the company undertaking

1.1. Product identifier

Product name: **ZNI Booster Inhibitor**

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

Use of substance / mixture: Corrosion inhibitor for use with Scalebreaker SR crystals to allow descaling of zinc and galvanised equipment.

1.3. Details of the supplier of the safety data sheet

Company name: Kamco Ltd
Unit 9, Curo Park
Frogmore
St Albans
Herts
AL2 2DD

Tel: 01727 875020

Fax: 01727 875335

Email: info@kamco.co.uk

1.4. Emergency telephone number

Emergency number (Office hours 8am-5pm): 01727 875020

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CHIP: Harmful Xn: R22-40-63
Dangerous for the environment N: R51/53
Carc. Cat. 3
Repr. Cat. 3

Classification under CLP:

Physical: Acute Tox. 4: H302

Health: Carc. 2: H351
Repr. 2: H361d

Environmental: Aquatic Chronic 2: H411

2.2. Label elements

Label elements under CLP: The substance is classified and labelled according to the CLP regulation.

Hazard statements: H302: Harmful if swallowed
H351: Suspected of causing cancer
H361d: Suspected of damaging the unborn child
H411: Toxic to aquatic life with long lasting effects

Signal words: Warning

Hazard pictograms:

Precautionary statements: P273: Avoid release to the environment
P281: Use personal protective equipment as required
P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P308+P313: IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Other hazards: PBT & vPvB: Not applicable

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

Ingredients	EINECS	CAS	CHIP Classification	CLP Classification	Index No
THIOUREA	200-543-5	62-56-6	Xn: R22-40-63; N: R51/53; Carc. Cat 3, Repr Cat. 3	Carc 2: H351; Repr 2: H361d; Acute Tox. 4: H302; Aquatic Chronic 2: H411	612-082-00-0

Section 4: First aid measures

4.1. Description of first aid measures

General information: Seek medical treatment.

Skin contact: Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

Eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Ingestion: Call for a doctor immediately.

Inhalation: Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

4.2. Most important symptoms and effects, both acute and delayed

Acute: No further relevant information available.

Delayed: No further relevant information available.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: No further relevant information available.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Fire-extinguishing powder
Foam
Water
Carbon dioxide

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion hazards: Nitrogen oxides (NOx)

Hazardous Combustion Products:	Formation of toxic gases is possible during heating or in case of fire.

5.3. Advice for fire-fighters

Advice for fire-fighters:	**Protective equipment:** Wear self-contained respiratory protective device. **Additional information:** Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions:	Avoid formation of dust. Ensure adequate ventilation. Wear protective clothing.

6.2. Environmental precautions

Environmental precautions:	Do not allow to enter sewers/surface or ground water. Inform respective authorities in case of seepage into water course or sewage system.

6.3. Methods and material for containment and cleaning up

Clean-up procedures:	Dispose contaminated material as waste according to item 13.

6.4. Reference to other sections

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.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements:	Ensure good ventilation/exhaustion at the workplace. Prevent formation of dust. **Information about fire - and explosion protection:** Dust can combine with air to form an explosive mixture.

7.2. Conditions for safe storage, including and incompatibilities

Storage conditions:	**Requirements to be met by storerooms and receptacles:** No special requirements. **Information about storage in one common storage facility:** Not required. **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles. Store receptacle in fume cupboard.

7.3. Specific end use(s)

Specific end use(s):	see §1.2

Section 8: Exposure controls/personal protection

8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:	Not required.
Additional information:	The lists valid during the making were used as basis.

8.2. Exposure controls

General protective and hygienic measures: Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.

Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Filter B
Filter P3

Skin/Hand protection: **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.

Penetration time of glove material
The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/Face protection: **Eye protection:**

Tightly sealed goggles

Other protective Equipment: **Body protection:** Use protective suit.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	**Colour:** Whitish
Physical Form:	Crystalline
Odour:	Odourless
pH:	5-7
Melting Point/Melting Range:	176-178℃
Initial Boiling Point/Range:	? ℃
Flash Point:	Not applicable.
Flammability (solid, gas):	Product is not flammable.
Upper Explosive Limits (vol % in air):	Not determined

Lower Explosive Limits (vol % in air): Not determined

Vapour Pressure at 20ºC: 0.0001 hPa

Density at 20℃: 1.405 g/cm³

Bulk density at 20℃: 500-700 kg/m³

Solubility in / Miscibility with water at 20℃: 136 g/l

Partition Coefficient (n-octanol/water) (Kow): -0.92 log POW

Auto-ignition Temperature: 440℃

Viscosity: Not applicable.

Explosive Properties: Product does not present an explosion hazard.

9.2. Other information

Pour point: No further relevant information available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity:

10.2. Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3. Possibility of hazardous reactions

Hazardous reactions: Reacts with strong acids.
Reacts with strong oxidizing agents.

10.4. Conditions to avoid

Conditions to avoid: No further relevant information available.

10.5. Incompatible materials

Materials to avoid: No further relevant information available.

10.6. Hazardous decomposition products

Haz. decomp. products: Poisonous gases/vapours
Nitrogen oxides (NOx)
Sulphur oxides (SOx)

Section 11: Toxicological information

11.1. Information on toxicological effects

LD/LC50 values relevant for classification:		
Oral	LD50	1750 mg/kg (rat)
Dermal	LD50	>2800 mg/kg (rabbit)

Symptoms / routes of exposure

Aspiration Hazard:

Skin Corrosion/Irritation: No irritant effect.

Serious Eye Damage/Irritation: No irritating effect.

Signs and Symptoms:

Skin Sensitisation: No sensitizing effects known.

Respiratory Sensitisation:

Specific Target Organ Toxicity (Single Exposure):

Specific Target Organ Toxicity (Repeated Exposure):

Carcinogenicity: Carc. 2

Germ Cell Mutagenicity:

Reproductive Toxicity: Repr. 2

Section 12: Ecological information

12.1. Toxicity

Toxicity:

Aquatic toxicity:	
EC 50 (48 u)	35 mg/l (daphnia magna)
LC 50	>100 mg/l (Pimephales promelas)
LC 50 (96 u)	10000 mg/l (Brachydanio rerio)

12.2. Persistence and degradability

Persistence and degradability: No further relevant information available.

Persistence per IOPC Fund definition:

12.3. Bioaccumulative potential

Bioaccumulative potential: No further relevant information available.

12.4. Mobility in soil

Mobility: No further relevant information available.

Ecotoxical effects: **Remark:** Toxic for fish.
General notes: Do not allow product to reach ground water, water course or sewage system.
Toxic for aquatic organisms.

12.5. Results of PBT and vPvB assessment

PBT or vPvB identification: Not applicable.

12.6. Other adverse effects

Other adverse effects: No further relevant information available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: **Recommendation:** Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal of packaging: **Uncleaned packaging:**
Recommendation: Disposal must be made according to official regulations.

Section 14: Transport information

14.1. UN Number

UN number: UN2811

14.2. UN proper shipping name:

ADR: 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiourea)

IMDG: TOXIC SOLID, ORGANIC, N.O.S. (thiourea), MARINE POLLUTANT

IATA: TOXIC SOLID, ORGANIC, N.O.S. (thiourea)

14.3. Transport Class:

Transport class: **ADR, IMDG:**

Class 6.1 Toxic substances.
Label 6.1

IATA:

Class 6.1 Toxic substances.
Label 6.1

14.4. Packing Group:

ADR, IMDG, IATA: III

14.5. Environmental Hazards:

Environmental hazards: Environmentally hazardous substance, solid; Marine Pollutant

Marine pollutant: Symbol (fish and tree)

Special marking (ADR): Symbol (fish and tree)

14.6. Special precautions for user:

Warning: Toxic substances.
Danger code (Kemler): 60
EMS Number: F-A, S-F

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable.

Transport/Additional information:

ADR

Tunnel restriction code: E

UN "Model Regulation": UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiourea), 9, III

Section 15: Regulatory information

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

Labelling according to Regulation (EC) No 1272/2008 GHS label elements.

National Regulations:

Technical instructions (air):

Class	Share in %
I	100.0

Water hazard class: Water hazard class 2 (Assessment by list): hazardous for water.

15.2. Chemical Safety Assessment

Chemical Safety Assessment: A Chemical Safety Assessment has not been carried out

Section 16: Other information

Legal disclaimer: "The information provided in these documents is based on our present state of knowledge of the product and is given in good faith and to the best of our experience. However, it should not be construed as a technical specification or as guaranteeing specific properties. In no event will we be responsible for damages or effects of any nature whatsoever, either express or implied, resulting from the use of this information. It is the own responsibility of the consignee and the user of the product to comply with all prevailing and applicable laws, regulations and directives. They should also make their own determination as to the suitability of the product for a particular use or application."

Emergency Numbers
European Emergency Number: 112

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Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
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
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
· * Data compared to the previous version altered.