SAFETY DATA SHEET

PRODUCT

TRASAR® TRAC100

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **TRASAR® TRAC100**

APPLICATION : CLOSED SYSTEM CORROSION INHIBITOR

COMPANY IDENTIFICATION :

CHINA :	NALCO INDUSTRIAL SERVICES (SUZHOU) CO LTD	TEL:	86-512-68255001	FAX:	86-512-68250130
INDIA :	NLC NALCO INDIA LIMITED	TEL:	9133 2674 0395	FAX:	91-33-22296858
INDONESIA :	PT. NALCO INDONESIA	TEL:	62-21-8753175	FAX:	62-21-8753167
MALAYSIA :	NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD	TEL:	603-5569 4118	FAX:	603-5569 5955
PHILIPPINES :	NALCO PHILIPPINES INC.	TEL:	63-49-5451550	FAX:	63-49-5453442
SINGAPORE :	NALCO PACIFIC PTE LTD	TEL:	65- 6505-6868	FAX:	65-6862 0850
THAILAND :	NALCO INDUSTRIAL SERVICES (THAILAND) CO LTD	TEL:	66-38-955-160	FAX:	66-38-955-166

Date issued : 29.10.2009
Version Number : 1.2

See Section 16 for address information.

EMERGENCY TELEPHONE NUMBER(S) : For local telephone numbers, refer to Section 16.
International Emergency Number: + 65 6542 9595

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

CHEMICAL NAME	CAS NO	% (w/w)
Sodium Molybdate	7631-95-0	10 - 30
Sodium Metasilicate	6834-92-0	5 - 10
Sodium Tetraborate	1330-43-4	1 - 5

The balance of the substances in this product are not classified as hazardous or are present below hazard cut-off limits

3. HAZARDS IDENTIFICATION

HUMAN HEALTH HAZARDS - ACUTE

EYE CONTACT
Can cause moderate irritation.

SKIN CONTACT
Can cause moderate irritation.

INGESTION
Not a likely route of exposure. May cause mucosal damage. Liver effects and/or damage may occur.

INHALATION
Not a likely route of exposure. Repeated or prolonged exposure may irritate the respiratory tract.

HUMAN HEALTH HAZARDS - CHRONIC :
Molybdenum compounds exhibit low toxicity and cases of human intoxication are rare. However, long-term exposure to molybdenum may interfere with the availability of copper.

PHYSICAL AND CHEMICAL HAZARDS :
No data available.

4. FIRST AID MEASURES

EYE CONTACT :
PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 15 minutes while holding eyelids open. If only one eye is affected be sure to use care not to contaminate the other eye with the run-off. Get immediate medical attention.

SKIN CONTACT :
PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush with plenty of water for at least 15 minutes. For a large splash, flood body under a shower. Remove contaminated clothing. Wash off affected area immediately with plenty of water. Get immediate medical attention. Contaminated clothing, shoes, and leather goods must be discarded or cleaned before re-use.

INGESTION :
DO NOT INDUCE VOMITING. If conscious, washout mouth and give water to drink. If reflexive vomiting occurs, rinse mouth and repeat administration of water. Get immediate medical attention.

INHALATION :
Remove to fresh air, treat symptomatically. Get immediate medical attention.

NOTE TO PHYSICIAN :
Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : Not flammable

EXTINGUISHING MEDIA :
Not expected to burn. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

SENSITIVITY TO STATIC DISCHARGE :
Not expected to be sensitive to static discharge.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is

safe to do so. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Do not mix with acids.

STORAGE CONDITIONS :
Protect product from freezing. Store the containers tightly closed. Store separately from acids. Store in suitable labeled containers.

SUITABLE CONSTRUCTION MATERIAL :
HDPE (high density polyethylene), Stainless Steel 304, Brass, Neoprene, Viton, Buna-N, Hypalon, EPDM, Polyethylene (rigid), Polypropylene (rigid), CPVC (rigid), Plasite 4300, Plasite 7122

UNSUITABLE CONSTRUCTION MATERIAL :
Polyurethane, coated steel

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Country/Source	Substance(s)	Category:	ppm	mg/m3
CHINA	Molybdenum (as Mo), Soluble Compounds as Mo	TWA		4
INDONESIA	Borates, Tetra, Sodium Salts -- Anhydrous	TWA TWA		1 5
	Molybdenum (as Mo), Soluble Compounds as Mo	TWA		5
MALAYSIA	Borates, Tetra, Sodium Salts -- Anhydrous	TWA TWA		1 5
	Molybdenum (as Mo), Soluble Compounds as Mo	TWA		5
PHILIPPINES	Molybdenum (as Mo), Soluble Compounds	TWA		5

SINGAPORE	Borates, Tetra, Sodium Salts -- Anhydrous	TWA TWA	1 5
	Molybdenum (as Mo), Soluble Compounds as Mo	TWA	5
USA	Borates, Tetra, Sodium Salts -- Anhydrous (Inhalable fraction.)	ACGIH/TWA	2
		ACGIH/STEL	6
	Molybdenum (as Mo), Soluble Compounds as Mo (Respirable fraction.)	ACGIH/TWA	0.5
	Molybdenum (as Mo), Soluble Compounds as Mo	OSHA Z1/PEL	5

* A skin notation refers to the potential significant contribution to overall exposure by the cutaneous route, including mucous membranes and the eyes.

ENGINEERING MEASURES :
General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

PERSONAL PROTECTION

GENERAL ADVICE :
The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION :
An approved respirator must be worn if the occupational exposure limit is likely to be exceeded. A dust, mist, fume cartridge may be used. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
Neoprene gloves Nitrile gloves PVC gloves Butyl gloves Rubber gloves Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION :
Wear protective overalls, chemical splash goggles and impervious gloves. A full slicker suit is recommended if gross exposure is possible.

EYE PROTECTION :
Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :
Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Light yellow
ODOR	None
pH (100 %)	13
VAPOR PRESSURE	No data available.
VAPOR DENSITY	No data available.
SPECIFIC GRAVITY	1.211 (25 °C)
DENSITY	No data available.
SOLUBILITY IN WATER	Complete
FREEZING POINT	-6.7 °C
BOILING POINT	No data available.
FLASH POINT	Not flammable
LOWER EXPLOSION LIMIT	No data available.
UPPER EXPLOSION LIMIT	No data available.
AUTOIGNITION TEMPERATURE	No data available.

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Extremes of temperature Freezing temperatures.

MATERIALS TO AVOID :
Acids Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA :
No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

For additional information on the hazard of the preparation, please consult section 2 and 12.

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :
No toxicity studies have been conducted on this product.

MOBILITY AND BIOACCUMULATION POTENTIAL :
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

This preparation or material is not expected to bioaccumulate.

PERSISTENCY AND DEGRADATION :

The organic portion of this preparation is expected to be readily biodegradable.

ENVIRONMENTAL HAZARD CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low

13. DISPOSAL CONSIDERATIONS

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

Empty drums should be taken for recycling, recovery, or disposal through a suitably qualified or licensed contractor.

NATIONAL REGULATIONS, CHINA
Comply with local regulations.

NATIONAL REGULATIONS, INDIA
Dispose of unused product in accordance with the "Hazardous Wastes (Management and Handling) Rules 1989" and local and State legislation, as applicable.

NATIONAL REGULATIONS, INDONESIA
Dispose of unused product in accordance with "Government Regulation No.85/1999 on Amendment of Government Regulation No. 18/1999 regarding Hazardous and Toxic Waste Management", which also replaces Government Regulation No. 19/1994 and No.12/1995, (and amendments) as applicable.

NATIONAL REGULATIONS, MALAYSIA
Dispose of in accordance with the Environmental Quality (Scheduled Wastes) Regulation 1989 and other guidelines issued by DOE and/or local authorities.

NATIONAL REGULATIONS, PHILIPPINES
Dispose of in accordance with Presidential Decree No. 984-1976 ("The Pollution Control Law"); DENR Department Administrative Order No.29-92 ("The Implementing Rules or Regulations of RA6969") and Presidential Decree No.825.

NATIONAL REGULATIONS, SINGAPORE
Dispose of waste in accordance with the Environmental Health Act (Chapter 95, Rg 11), Environmental Public Health (Toxic Industrial Waste) Regulations 1990 Ed.

NATIONAL REGULATIONS, THAILAND
Dispose of hazardous waste in accordance with the " The Notification of the Ministry of Industry B.E. 2548, subject : Disposal of Wastes or Unusable Materials".

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT

Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical Name(s) :	Sodium Metasilicate
UN/ID No :	UN 3266
Hazard Class - Primary :	8
Packing Group :	III
HAZCHEM CODE :	2X

NATIONAL REGULATIONS, CHINA
Comply with local regulations.

NATIONAL REGULATIONS, INDIA
Transport in accordance with the Central Motor Vehicles Rules 1989.

NATIONAL REGULATIONS, INDONESIA
Transport in accordance with all government regulations, including "Regulation of the Minister of Transportation No. 69/1993 on Land Transportation".

NATIONAL REGULATIONS, MALAYSIA
There are no regulations specifically governing the transport of chemicals. Use best practice.

NATIONAL REGULATIONS, PHILIPPINES
Transport in accordance with the following legislation (as applicable): Presidential Decree No. 1185, 1977 ("Fire Code of the Philippines") and implementing rules and regulations; Presidential Decree No. 856, 1975 ("Code of

Sanitation"); Republic Act No 6969, 1990 ("Toxic Substances and Hazardous and Nuclear Wastes Control Act") and implementing rules and regulations.

NATIONAL REGULATIONS, SINGAPORE
Land Transport complies with the Environmental Pollution Control (Hazardous Substances) Regulations 1999, which follows the "Specification for Caution Labelling for Hazardous Substances" - Singapore Standard 286 (1984).

NATIONAL REGULATIONS, THAILAND
The product should be transported in accordance with "Hazardous Substances Acts B.E.2535", "Notification of Ministry of Public Health Re: Label and Level of Toxicity of Dangerous Articles Which are Under the Responsibility of Food and Drug Administration 2534 (If applicable)" and "Notification of Land Transportation Department, Subject : Label of truck which contain hazardous material, Notification date : 14 November B.E.2543 (14 November 2000)".

AIR TRANSPORT (ICAO/IATA)

Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical Name(s) :	Sodium Metasilicate
UN/ID No :	UN 3266
Hazard Class - Primary :	8
Packing Group :	III
IATA Cargo Packing Instructions :	820
IATA Cargo Aircraft Limit :	60 L (Max net quantity per package)
IATA Passenger Packing Instructions :	Y818 / 818
IATA Passenger Aircraft Limit :	1 L / 5 L

MARINE TRANSPORT (IMDG/IMO)

Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical Name(s) :	Sodium Metasilicate
UN/ID No :	UN 3266
Hazard Class - Primary :	8
Packing Group :	III
EmS-Nr. :	F-A, S-B

15. REGULATORY INFORMATION

NATIONAL REGULATIONS EUROPE :

HAZARD SYMBOLS

IRRITANT

Contains:..Sodium Metasilicate

RISK PHRASES
R36/38 - Irritating to eyes and skin.

NATIONAL REGULATIONS, MALAYSIA :

HAZARD SYMBOLS

IRRITANT

Contains:..Sodium Metasilicate

RISK PHRASES
R36/38 - Irritating to eyes and skin.

SAFETY PHRASES
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

INTERNATIONAL REGULATIONS

NFPA RATING
HEALTH : 2 FLAMMABILITY : 0 INSTABILITY : 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

NSF NON-FOOD COMPOUNDS REGISTRATION PROGRAM (former USDA List of Proprietary Substances & Non-Food Compounds) :
NSF Registration number for this product is : 141575
This product is acceptable for treating boilers, steam lines, and/or cooling systems where neither the treated water nor the steam produced may contact edible products in and around food processing areas, excluding such use in areas where meat and poultry are processed (G10).

INTERNATIONAL CHEMICAL CONTROL LAWS

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

UNITED STATES :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADA :
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

EUROPE
The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

CHINA
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on the Inventory of Existing Chemical Substances China (IECSC).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

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NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD; No 1, Jalan Jururancang U1/21, Seksyen U1, Hicom-Glenmarie Industrial Park, 40150 Shah Alam, Selangor Darul Ehsan, Malaysia

NALCO PHILIPPINES INC.; Barrio Real, Calamba, Laguna, Philippines

NALCO PACIFIC PTE LTD; 21 Gul Lane, Singapore 629416

NALCO INDUSTRIAL SERVICES (THAILAND) CO LTD; Rayong Plant, 109/19 M00 4, Eastern Seaboard Industrial Estate, Soi ESIE 6, T. Pluakdaeng, A. Pluakdaeng Rayong 21140 Thailand

EMERGENCY TELEPHONE NUMBER(S) :

CHINA :	**0080025378747 and 0065 6542 9595**
INDIA :	**+65 6542 9595**

INDONESIA :	**+65 6542 9595**
MALAYSIA :	**03 5569 4054**
PHILIPPINES :	**1800 10 8421250**
SINGAPORE :	**6542 9595**
THAILAND :	**02-104-0545**

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

Prepared By: Nalco Asia Pacific, Safety, Health and Environment (SHE) Specialist