SAFETY DATA SHEET

PRODUCT

STABREX® ST70

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	**STABREX® ST70**
OTHER MEANS OF IDENTIFICATION	Not applicable
RECOMMENDED USE AND RESTRICTIONS	MICROORGANISM CONTROL CHEMICAL Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
COMPANY IDENTIFICATION	ECOLAB PTE LTD 21 Gul Lane, Singapore 629416 TEL: 65- 6505-6868 FAX: 65-6862 0850
EMERGENCY TELEPHONE NUMBER(S)	+65 6542 9595

2. HAZARDS IDENTIFICATION

CLASSIFICATION

Skin corrosion/irritation - Category 1
Serious eye damage/eye irritation - Category 1
Corrosive to metals - Category 1
Acute aquatic toxicity - Category 2

GHS LABEL ELEMENTS

HAZARD SYMBOLS

SIGNAL WORD : Danger

HAZARD STATEMENTS
Causes severe skin burns and eye damage.
May be corrosive to metals.
Toxic to aquatic life.

PRECAUTIONARY STATEMENTS

Prevention:
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Keep only in original container.
Avoid release to the environment.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 doctor/ physician.
Collect spillage.

Storage:
Store in corrosive resistant container with a resistant inner liner.

Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.

OTHER HAZARDS
None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE / PREPARATION :
Mixture

CHEMICAL NATURE :
Water, Inorganic compound

CHEMICAL NAME	CAS NO	% (w/w)
Sodium Hypochlorite	7681-52-9	5 - 10
Sodium Hydroxide	1310-73-2	1 - 5

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

4. FIRST AID MEASURES

INHALATION
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

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.

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.

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.

MOST IMPORTANT SYMPTOMS/ EFFECTS
Causes severe skin burns and eye damage.

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.

PROTECTION FOR FIRST AID PERSONNEL
Wear adequate personal protective equipment.

5. FIRE FIGHTING MEASURES

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

FIRE AND EXPLOSION HAZARD
Not flammable or combustible.

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

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

ENVIRONMENTAL PRECAUTIONS
Toxic to aquatic organisms.

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). Do not clean up spills with sawdust, cotton waste or other combustible absorbent materials.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled.

SUITABLE STORAGE CONDITIONS
Store in suitable labeled containers. Store the containers tightly closed. Store separately from acids.

SUITABLE CONSTRUCTION MATERIAL :
Polyethylene, Polypropylene, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., HDPE (high density polyethylene), Neoprene, PVC, Polyurethane, Chlorosulfonated polyethylene rubber, Fluoroelastomer

UNSUITABLE CONSTRUCTION MATERIAL :
Brass, Buna-N, EPDM, Stainless Steel 316L, Stainless Steel 304, Mild steel, 100% phenolic resin liner, Epoxy phenolic resin

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

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)	Basis	ppm	mg/m3
SINGAPORE	Sodium Hydroxide	PEL (short term)		2
USA	Sodium Hydroxide	ACGIH/Ceiling		2
		NIOSH REL/Ceiling		2
		OSHA Z1/TWA		2

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

MONITORING MEASURES
A small volume of air is drawn through an absorbant or barrier to trap the substance(s) which can then be desorbed or removed and analyzed as referenced below:

Substance(s)	Method	Analysis	Absorbant
Sodium Hydroxide	US NIOSH: 7401	Titration	PTFE filter

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

PERSONAL PROTECTION

RESPIRATORY PROTECTION
An approved respirator must be worn if the occupational exposure limit is likely to be exceeded. A particulate 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.

EYE PROTECTION
Wear a face shield with chemical splash goggles.

HAND PROTECTION
NITRILE GLOVES VITON GLOVES Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION
Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible.

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	Clear Light yellow
ODOR	None
ODOR THRESHOLD	No data available.
pH (100.0 %)	13.0
FREEZING POINT	-8.2 °C
INITIAL BOILING POINT / BOILING POINT	No data available.
FLASH POINT	Not flammable
EVAPORATION RATE	No data available.
FLAMMABILITY (solid, gas)	No data available.
LOWER EXPLOSION LIMIT	No data available.
UPPER EXPLOSION LIMIT	No data available.
VAPOR PRESSURE	No data available.
VAPOR DENSITY	No data available.
SPECIFIC GRAVITY	1.32 - 1.36 (25.0 °C)
DENSITY	No data available.
SOLUBILITY IN WATER	Complete
OCTANOL/WATER COEFFICIENT (log Kow)	No data available.
AUTOIGNITION TEMPERATURE	No data available.
DECOMPOSITION TEMPERATURE	No data available.
VISCOSITY	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 REACTIONS
Hazardous polymerization will not occur.

CONDITIONS TO AVOID
Extremes of temperature Heat and light which can accelerate decomposition. Freezing temperatures.

INCOMPATIBLE MATERIALS
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors.

Contact with organic materials (e.g. rags, sawdust, hydrocarbon oils or solvents) and avoid reducing agents (e.g. hydrazine, sulfites, sulfide, aluminum or magnesium dust) which can generate heat, fires, explosions and the release of toxic fumes. Do not mix with any sodium hypochlorite or bleach product. Resulting mixture will result in a violent exothermic reaction releasing large amounts of nitrogen gas and liquid sulfuric acid. Contact with reactive metals (e.g. aluminum) may result in the generation of flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS
Under fire conditions: Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE

PRIMARY ROUTES OF EXPOSURE
Eye, Skin

Refer to the sections below for details of health effects via each route.

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE

ACUTE TOXICITY DATA
No adverse effects expected.

SKIN CORROSION / IRRITATION
Causes severe skin burns and eye damage.

SERIOUS EYE DAMAGE / IRRITATION
Causes serious eye damage.

RESPIRATORY / SKIN SENSITIZATION
This product is not expected to be a sensitizer.

GERM CELL MUTAGENICITY
Not expected to be a mutagen.

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).

REPRODUCTIVE TOXICITY
No reproductive toxic effects expected.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
No adverse effects expected.

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE
No adverse effects expected.

ASPIRATION HAZARD
No aspiration toxicity classification

NUMERICAL MEASURES OF TOXICITY

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

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

12. ECOLOGICAL INFORMATION

ECOTOXICITY

The following results are for the product.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Rainbow Trout	96 hrs	LC50	4.5 mg/l	Product
Sheepshead Minnow	96 hrs	LC50	16 mg/l	Product
Fathead Minnow	96 hrs	LC50	8.3 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	4.3 mg/l	Product
Mysid Shrimp (Mysidopsis bahia)	96 hrs	LC50	27 mg/l	Product
Ceriodaphnia dubia	48 hrs	LC50	1.6 mg/l	Product
Daphnia magna	48 hrs	EC50	4.2 mg/l	Product

AQUATIC PLANT RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum)	72 hrs	LC50	3.66 mg/l	Product
Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum)	72 hrs	NOEC	2.5 mg/l	Product

CHRONIC FISH RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Fathead Minnow	7 Days	EC25 / IC25	3.34 mg/l	Product
Fathead Minnow	7 Days	NOEC	2.5 mg/l	Product

Chronic Invertebrate Results :

Species	Exposure	Test Type	Value	End Point	Test Descriptor
Ceriodaphnia dubia		EC25 / IC25	15.6 mg/l	Reproduction	Product
Ceriodaphnia dubia		LOEC	40.0 mg/l	Survival	Product
Ceriodaphnia dubia		NOEC	20.0 mg/l	Survival	Product
Ceriodaphnia dubia		LOEC	5.0 mg/l	Reproduction	Product

Ceriodaphnia dubia		NOEC	2.5 mg/l	Reproduction	Product

PERSISTENCY AND DEGRADATION

Chemical Oxygen Demand (COD) : 89,000 mg/l

Biological Oxygen Demand (BOD) :This material is an oxidizing biocide and is not expected to persist in the environment.

MOBILITY
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%	30 - 50%

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

BIOACCUMULATION POTENTIAL
This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate

OTHER INFORMATION
No data available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
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.

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

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

UN/ID No :	UN 3266
Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Hydroxide, Sodium Hypochlorite)

Hazard Class(es) :	8
Packing Group :	II

AIR TRANSPORT (ICAO/IATA)

UN/ID No :	UN 3266
Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Hydroxide, Sodium Hypochlorite)
Hazard Class(es) :	8
Packing Group :	II

MARINE TRANSPORT (IMDG/IMO)

UN/ID No :	UN 3266
Proper Shipping Name :	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium Hydroxide, Sodium Hypochlorite)
Hazard Class(es) :	8
Packing Group :	II
EmS-Nr. :	F-A, S-B
Marine Pollutant :	No

SPECIAL PRECAUTIONS FOR USER : No special precautions required.

15. REGULATORY INFORMATION

APPLICABLE REGULATIONS, SINGAPORE

Chemical Weapons Prohibition Act
Environmental Protection and Management Act
Hazardous Waste Act
Misuse of Drugs Act
Strategic Goods Act

INTERNATIONAL REGULATIONS

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :
When use situations necessitate compliance with FDA regulations, this product is acceptable under : the following use conditions.

This product may be employed in the treatment of papermill influent water systems in plants where paper or paperboard destined for food contact purposes is manufactured as long as the bromide ion concentration in the water is no greater than 22 ppm.

INTERNATIONAL CHEMICAL CONTROL LAWS

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

CANADA
Substances regulated under the Pest Control Products Act are exempt from CEPA New Substance Notification requirements.

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

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).

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

NEW ZEALAND
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

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).

UNITED STATES
This product is exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory List.

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.

REFERENCES

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

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.

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Prepared By:	Nalco Asia Pacific, Regulatory Affairs (RA) Specialist