



MATERIAL SAFETY DATA SHEET

SECTION 1	
1.1. Identification of the preparation	Product Name: K-Sorb
1.2. Company Undertaking identification	Concept for Pharmacy Ltd.
ADDRESS:	21, Atir Yeda st., Kfar Saba, Israel
EMERGENCY PHONE	972-9-7667890 or FAX 972-9-7667899
By MANUFACTURER:	Concept for Pharmacy Ltd.
ADDRESS:	21, Atir Yeda st., Kfar Saba, Israel

USE	Disinfectant for Hospital, Clinic used as an absorbent for biological spillages
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SECTION 2	COMPOSITION / INFORMATION ON INGREDIENTS
ACTIVE INGREDIENT:	Troclosene Sodium
CHEMICAL NAME:	1,3 - dichloro 1,3,5, triazine - 2,4,6 (1H,3H,5H) - trione. (Anhydrous)
CHEMICAL FAMILY:	Organic chlorine donor.
FORMULA:	$\text{NaCl}_2(\text{NCO})_3$ or $\text{C}_3\text{N}_3\text{O}_3\text{Cl}_2\text{Na}$
CAS Number	2893 -78- 9
Other Ingredients:	Inert effervescent base, the constituents of which are approved food additives.
COMPOSITION:	Contains 100,000mg:Lt LAC derived from Sodium Troclosene (50% w/w) in an effervescent base.

SECTION 3	HAZARDS CLASSIFICATION
	The powder Non hazardous when used as directed. <u>Specific hazards / EEC</u> Harmful if swallowed (undissolved). The powder is irritating to eye and respiratory system.

SECTION 4	FIRST AID MEASURES
Inhalation:	Move to fresh air. Rest the affected person in a semi-seated position. In case of persistent problems consult a physician.
Skin contact: (of the powder)	Wash immediately and abundantly with water. Contact with individual tablets is NOT harmful.
Eye contact	In case of contact with the eyes, rinse immediately with plenty of water.
Ingestion:	If the powder is swallowed, immediately drink plenty of MILK or if unavailable - drink water. Do NOT induce vomiting. No short or long term effects will result, other than a possible upset stomach. If necessary seek medical advice.



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SECTION 5

Fire Fighting Measures.

Extinguishing media Water

Fire fighting Techniques comments.

Packaging will burn if involved in a fire; product is essentially non-combustible but will give off toxic fumes when heated. Breathing apparatus must be worn when fighting fires. If safe to do so, remove undamaged containers from the fire area in order to minimise hazards from release of toxic fumes. Extinguish small fires with dry powder extinguishers. It will often be safer to let the fire burn itself out. where it is decided to fight the fire with water, LARGE volumes MUST be used.

SECTION 6

Accidental Release measures

Personal Protection

Avoid contact of powder with eyes and skin. Sweep up to prevent any hazards.

Environmental Protection

Do not release into the environment.

Prevent flow of material or very concentrate solutions into water source - begin monitoring available chlorine and pH. Note concentrations up to 5 ppm are used for purifying water sources. If above this level, notify all down stream users of possible contamination.

Methods of cleaning up.

Tablet form: Recover spilled material using dry, clean equipment and container. Remove the container to a well-ventilated area for treatment with water.

In Solution: Treat with a reducing agent - Sodium Thiosulphate.

SECTION 7

Handling and Storage

Handling:

Do not take internally without dissolution to the recommended dilution. Solution in water is used to render microbiologically contaminated water potable.

In case of contact of the powder with the eyes or skin, rinse immediately with plenty of water. Avoid contact of powder with eyes and skin.

Storage:

Store in a cool dry well ventilated area.

SECTION 8

Exposure controls / Personal protection.

Hand Protection:

Latex gloves are optional when handling the powder .

SECTION 9

Chemical and Physical Properties

Appearance: White / off white powder with blue speckles

Odour: Chlorine odour.

Decomposition temperature;

Decomposes above 250°C with release of chlorine and other toxic fumes.

Solubility: Soluble in water slowly forming monosodium cyanurate, isocyanuric acid and a weak hypochlorous acid solution.

Oxidising agent.

SECTION 10

Stability and Reactivity

Conditions to avoid:

Moisture and heat

Materials to avoid:

Combustible / flammable materials (eg Oils / Fats)

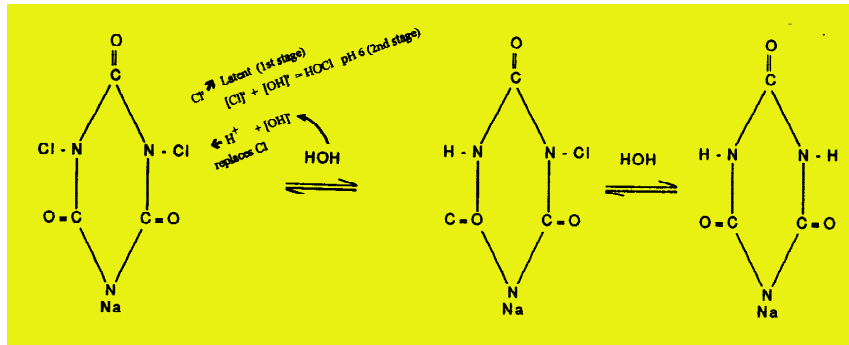
Acids eg Hydrochloric acid.

Reducing agents.

Hazardous Decomposition Products. NONE

On solution in water K-Sorb releases chlorine with the formation of monosodium cyanurate and isocyanuric acid, and small amounts of Hypochlorous acid and similar moieties, all of which are non-toxic and non-hazardous compounds. The reaction is as follows;

שחרור חנקן וכלור & מוצר נוסף



Troclosene sodium

monosodium cyanurate

isocyanuric acid



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SECTION 11

Toxicology

K-Sorb containing Troclosesene is safe in use. If however powder is swallowed by accident, a glass of milk will neutralise any possible unpleasant effects. Risk assessment may therefore be based on the premise that Troclosesene is widely used for the purification of drinking water.

Troclosesene sodium and its breakdown products were not carcinogenic, teratogenic, mutagenic, fetotoxic or oncogenic in the animals studied. Troclosesene sodium has now been in use on open wounds in humans as a registered medicine for several years without incident. Chronic and subchronic studies showed no significant toxicity.

Since cyanurates are rapidly excreted from the body, any adsorption through wounds would not build up in the tissues.

The use of Troclosesene sodium (NaDCC) is also listed by the World Health Organisation in their report "*Water Supply Sanitation & Health in Rural Areas*" published in 1991.

In some markets Klorsept is called Aquatabs (known in Israel as Taharmayim) It is approved for use world wide for drinking water purification United Nations Common Coding System) UNCCS #856461 and has been in use for many years by western armies, and aid organisations such as the Red Cross, UNICEF, and OXFAM.

Risk assessment for the use of **K-Sorb** therefore best done by examining the toxicity of the breakdown products.

NaDCC -Isocyanurates:

Acute Toxicity LD₅₀ = 1.67 Gm:Kg in Rats
 LD₅₀ = > 2 Gm:Kg in Rabbits
 LD₅₀ = 3.57 Gm:Kg in Humans *

This means that for a 60 Kg adult the LD₅₀ = 214 Gm of the active Troclosen sod. or 430Gm of **K-Sorb** powder would have to be eaten !!

*Environment Protection Agency (EPA). TSCA Chemical Inventory , USA June 1990, 105810/11/12 [493]

Chronic Toxicity: 333 ppm given orally to dogs and rate for SIX months with no signs of toxicity
Monosodium cyanurate:

Acute Toxicity: LD₅₀ => 7.5 Gm:Kg in Rats
 LD₅₀ = 20 Gm:Kg in Rabbits
 LD₅₀ = 21.4Gm:Kg in Cats

Chronic Toxicity 8% cyanurate mixed with the food of dogs was ingested
 for TWO years with no signs of toxicity

Cyanurates are eliminated unchanged from the human body. The elimination half life is 1.5 to 2 hours. {Allen,1982}

Irritancy Studies

No irritation on the intact skin was observed after the application of Troclosesene sodium in the form of undiluted, dry powder for 24 hours. No eye damage or irritation was caused by the daily instillation of a 333ppm solution of Troclosesene sodium to each of 5 albino rabbits for 5 days per week for 3 months.

Daily application of 5mls of a 333ml per litre solution, 5 days per week for 3 months to approximately 10% of the body surface of albino rabbits produced no adverse effects.

No eye damage was caused by the daily instillation of 0.1ml suspension of 8% monosodium cyanurate in one eye of each of 5 albino rabbits for 5 days par week for 3 months, to approximately 10% of the body surface of albino rabbits produced no local irritation but slight dilation of Bellini's ducts.

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Hazard Appraisal

Occasional splashes of the solution may contaminate eyes or skin, but available data demonstrates that this is highly unlikely to cause any damage.

It is concluded that, from the data reviewed, the use of sodium Troclosene in K-Sorb is unlikely to have any harmful effects in adults or children.

12. Ecological Information

Not applicable - However the Troclosene molecule is completely biodegradable. when the powder is 'used' the first breakdown compounds are monosodium cyanurate and isocyanuric. The ring of this latter is then broken and degrades to ammonia and carbon dioxide only.

13. Disposal considerations

Disposal of product. Dilute with large quantities of water
Disposal of Packaging Rinse container with water and dispose in accordance with national regulations.

14. Transport information. Not regulated.

15. Regulatory Information.

EEC Directive	93 / 112 / EEC
EEC Classification/Labeling:	92 / 3 / EEC
R22	Harmful if swallowed without dissolution
R31	Contacts with acids liberates toxic gases.
R36 / 37	Irritating to eye and respiratory system.
S8	Keep container dry
S26	In case of contact with the eyes, rinse immediately with plenty of water, and seek medical advice.
S2	Keep out of the reach of children
S3	Store in a cool, dry place.

16. Other Information.

SCIENTIFIC DATA:

Troclosene sodium is sodium dichloro-s-triazinetriene / Sodium dichloroisocyanurate). It is the sodium salt of 1,3 - dichloro 1,3,5, triazine - 2,4,6 (1H,3H,5H) - triene. It is a white crystalline or granular powder, of molecular weight 219.9, containing about 64% 'latent available chlorine' [L.A.C.] having the formula $C_3Cl_2N_3NaO_3$, sodium Troclosene has the action and uses of chlorine but its activity is only slightly affected by pH over the range 5 to 10. On solution in water it is relatively stable losing a maximum of 2% in 24h with the formation of monosodium cyanurate and isocyanuric acid both non-toxic and non-hazardous compounds.

Troclosene sodium effervescent tablets are also registered as a general disinfectant for use in hospitals, clinics, and also as a medicine in Israel. They are suitable for use as an emergency water disinfectant. They are not intended for oral administration, and must be dissolved in water before use in accordance with the instructions.

Additional health and safety data or usage information on this product will be provided upon request.

The above information, is intended to give general guidance as to health and safety. Whilst it is correct to the best of our knowledge and belief, no warranty can be given or implied that it will be adequate or applicable for all cases nor that the product will be suitable for any particular purpose since conditions of use are outside our control.

Revised 25th Jun 2018 YF