

# SENO 4006 LIQUID DEVELOPER CONCENTRATE

Part Nos. 600-010 - 1 Litre for 10 Litres

## Description

A safe liquid developer for the processing of Mega's Fotoboard, FPC-16, Microtrak and other alkaline developed positive photoresists. Supplied as a 1 litre concentrate to make 10 litres of working solution.

## Features

4006 Seno developer is very stable and is safe to use as it contains no Sodium Hydroxide (NaOH).

The developer has a high safety margin against over development. A board can be left immersed for up to 50 times longer than the normal 30 seconds developing time without any risk of over developing or thinning of resist. The developer has a long life especially when used in a PCB processing tank.

## Health and Safety

Full health and safety details are on the rear of this instruction sheet. A report by an occupational hygienist concluded that, under the test conditions, **NO LOCAL EXHAUST VENTILATION IS REQUIRED** using this developer in Mega's PCB processing tanks. Copies of the report are available upon request.

## Mixing & Usage

For use with Fotoboard and FPC-16 the mix is 9 parts water to 1 part developer. If it is being used in a Mega PCB tank add 4.5 litres of water and 500ml (half 1 litre bottle) to the tank and stir thoroughly. The concentration for Microtrak is 15 parts water to 1 part developer. The strength for other resists should be determined by trial and error.

Operating temperature should be between 18-24°C. The image should appear after 30 seconds and the board be fully developed after 1-2 minutes depending on operating temperature.

## Associated Products

A range of associated products for use with this developer are featured in our free product catalogue.

Please telephone us for your free copy



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THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE ACCURATE - HOWEVER NO GUARANTEE OR WARRANTY EXPRESSED OR IMPLIED IS GIVEN

**SECTION 1 PRODUCT IDENTIFICATION AND MANUFACTURE**

NAME: LIQUID DEVELOPER CONCENTRATE 4006  
PART NO: 600-010

**MANUFACTURER'S/SUPPLIERS NAME, REGISTERED ADDRESS AND EMERGENCY TEL NO:**

MEGA ELECTRONICS LTD.,  
THE GRIP INDUSTRIAL ESTATE,  
LINTON, CAMBRIDGE.  
ENGLAND, CB21 4XN.  
TELEPHONE: 0044 01223 893900

**ORGANISATIONS NAME & ADDRESS AT WHICH MANUFACTURED**

KEPETS GMBH.  
NORDSTRASSE 24  
D-35841 SCHÖFFENGRUND  
LAUFDORF.  
GERMANY.  
TEL: 0049 644 55023

**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENT	%BY WT	CAS & EEC Nos:	HAZARD	R PHRASE Nos:
SODIUM METASILICATE	33	NCC	Xn	(36,37,38) (22)

**SECTION 3 HAZARDS IDENTIFICATION**

HARMFUL. HARMFUL BY INHALATION AND IF SWALLOWED. INORGANIC SUBSTANCE, AVOID ENTRY INTO DRAINAGE SYSTEM

**SECTION 4 FIRST AID MEASURES**

**INHALATION:**  
REMOVE FROM EXPOSURE TO FRESH AIR.

**SKIN CONTACT:**  
IRRIGATE THOROUGHLY WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING.

**EYE CONTACT:**  
IRRIGATE THOROUGHLY WITH WATER. OBTAIN MEDICAL ATTENTION.

**INGESTION:**  
RINSE MOUTH OUT WITH WATER. DO NOT INDUCE VOMITING. SEEK MEDICAL ATTENTION.

MEDICAL NOTES: N/A

**SECTION 5 FIRE FIGHTING MEASURES**

**EXTINGUISHING MEDIA**  
WATER SPRAY, FOAM, DRY POWDER CO2

**COMBUSTION PRODUCTS**  
N/A

**FIRE/EXPLOSION SCENARIOS**

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS**

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**PERSONAL PROTECTION** WEAR RESPIRATORY PROTECTION. AVOID CONTACT WITH SKIN AND EYES

**ENVIRONMENTAL PRECAUTIONS** . AVOID ENTRY INTO DRAINAGE SYSTEM AND EARTH

**WORKPLACE PRECAUTIONS** DO NOT EAT, DRINK OR SMOKE.

**METHODS FOR CLEARING UP:** DRY, COLLECT AND PUT INTO SUITABLE CONTAINER FOR DISPOSAL.

LIQUID: ABSORB IN SAND OR OTHER INERT MATERIAL AND PUT INTO SUITABLE CONTAINER FOR DISPOSAL.

**SECTION 7 HANDLING AND STORAGE**

**HANDLING PRECAUTIONS**

HARMFUL IF SWALLOWED. ALWAYS WEAR SUITABLE PROTECTIVE CLOTHING (SEC. 8) NO LOCAL EXHAUST VENTILATION IS REQUIRED IF USED ACCORDING TO INSTRUCTIONS.

**STORAGE INCLUDING ANY SPECIAL REQUIREMENTS (TEMPERATURE, VENTILATION, ETC)**

STORE ONLY IN SUITABLE POLYETHYLENE CONTAINERS ENSURING THEY ARE TIGHTLY CLOSED. STORE AT ROOM TEMPERATURE. KEEP FROM FREEZING WHEN MIXED. NO LOCAL EXHAUST VENTILATION REQUIRED IF USED ACCORDING TO INSTRUCTIONS

**SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION**

**ENGINEERING CONTROLS/ VENTILATION**

NO LOCAL EXHAUST VENTILATION REQUIRED IF USED ACCORDING TO INSTRUCTIONS.

**RESPIRATORY PROTECTION**

PROTECTIVE MASK REQUIRED WHEN MIXING.

**EYE PROTECTION**

WEAR PROTECTIVE GLASSES.

**HAND PROTECTION**

WEAR PROTECTIVE RUBBER GLOVES

**SKIN PROTECTION**

ALWAYS OBSERVE ALL USUAL PRECAUTIONS WHEN HANDLING CHEMICALS. DO NOT EAT, DRINK OR SMOKE WHEN HANDLING.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE:** LIQUID

**COLOUR:** CLEAR

**ODOUR:** NONE  
13.5

**ACIDITY/ALKALINITY pH:**  
(Molar aqueous solution)

**BOILING POINT 90°C**

**MELTING POINT**

**FLASH POINT °C (Open/Closed Cup):** N/A

**AUTO IGNITION TEMP °C:** N/A

**THERMAL DECOMPOSITION TEMP °C:** N/A  
OXIDISER

**OXIDISING PROPERTIES:** STRONG

**EXPLOSIVE PROPERTIES:** N/A

**EXPLOSIVE LIMITS AT 25°C (% VOL. IN AIR)**

**LOWER:** **UPPER:**

**RELATIVE DENSITY:** 1.50g / CM<sup>3</sup>

**SOLID CONTENT %:**

**SOLUBILITY IN WATER:** UNLIMITED

**SOLUBILITY IN ORGANIC SOLVENTS**

**VOLATILE CONTENT**

**VAPOUR PRESSURE mm Hg at 20°C**  
(of principle component and name):

**RELATIVE VAPOUR DENSITY (air = 1):**

**EVAPORATION RATE**  
(n-butyl acetate = 1):

**CONDUCTIVITY:**

**SECTION 10 STABILITY AND REACTIVITY PROPERTIES**

**CONDITIONS TO AVOID:** OBSERVE USUAL PRECAUTIONS WHEN HANDLING CHEMICALS

**MATERIALS TO AVOID:** AVOID CONTACT WITH CONCENTRATED ACIDS

**HAZARDOUS DECOMPOSITION PRODUCTS:**

**HAZARDOUS POLYMERISATION WILL NOT OCCUR** N/A

**SECTION 11 TOXICOLOGICAL INFORMATION**

**EFFECT OF EYE CONTACT:** IRRITATING EFFECT, NO ACUTE TOXICITY.

**EFFECT OF SKIN CONTACT:** IRRITATING EFFECT, NO ACUTE TOXICITY.

**EFFECT OF INHALATION:** N/A

**EFFECT OF INGESTION:** LD50 (ORAL RAT):  
1490mg / 1 kg.

Any known data on sensitisation carcinogenicity, mutagenicity, teratogenicity, or narcosis  
NO EVIDENCE

**SECTION 12 ECOLOGICAL INFORMATION**

NO ACUTE TOXICITY BUT AVOID ENTRY INTO DRAINAGE SYSTEM. INORGANIC PREPARATION.

**SECTION 13 DISPOSAL CONSIDERATIONS**

ALWAYS DISPOSE OF ACCORDING TO LOCAL GOVERNMENT REGULATIONS. NEUTRALISATION OF SPENT SOLUTION. NEUTRALISE TO Ph of 8.5 – 9.0 BY ADDITION OF ACIDIC SOLUTION. SOLIDS WILL SEPARATE OUT. DECANT / FILTER THE LIQUID. SOLIDS MAY BE INCINERATED. BEFORE PUTTING LIQUID TO DRAIN NEUTRALISE TO Ph of 6.5 – 8 BY ADDITION OF ACIDIC SOLUTION.

**SECTION 14 TRANSPORT INFORMATION**

NOT RESTRICTED

**SECTION 15 REGULATORY INFORMATION**

**PRODUCT TRADE NAME / DESIGNATION:** LIQUID DEVELOPER CONCENTRATE

**CONTAINS:** SODIUM METASILICATE

**HAZARD SYMBOL:** Xn

**RISK PHRASE Nos. & Words:**

36, 37, & 38 IRRITATING TO EYES. IRRITATING TO RESPIRATORY SYSTEM. IRRITATING TO SKIN. HARMFUL IF SWALLOWED

**SAFETY PHRASE Nos. & Words:**

**S26** IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVISE.

**S28** AFTER CONTACT WITH SKIN WASH IMMEDIATELY WITH PLENTY OF SOAP AND WATER

**S/36/37** WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES

**OTHER INFORMATION**

**RECOMMENDED USES AND RESTRICTIONS:** Use only as directed.