

**MATERIAL SAFETY DATA SHEET**

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA FORM 174

Manufacturer's Name:  
Contact Address:

MICROCOPY-Division of Neo-Flo, Inc.  
3120 Moon Station Road  
Kennesaw, Georgia 30144-2765  
(770) 426-5715

Emergency Phone Number:  
DOT Hazard Classification:

N/A

Trade Name & Synonyms:

INSTA-NEG Developer

Formula:

Aqueous Mixture

Date Prepared:

4/29/2002

Prepared By:

Gordon LaPean

**Section 1 - Material Identification and Information**

Components-Chemical Name & Common Name	CAS Number	Range % (wt)	OSHA PEL mg/m <sup>3</sup>	ACGI H TLV mg/m <sup>3</sup>
Water	7732-18-5	80-85	N/A	N/A
Sodium Sulfite	7757-83-7	5-10	N/A	N/A
Hydroquinone**	123-31-9	1-5	2	2
Potassium Hydroxide	1310-58-3	1-5	2	2
D-Methylaminophenol sulfate	55-55-0	<1	N/A	N/A

**\*Principal Hazardous Component(s)**

\*\* Chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

NFPA Ratings (0-4): Health=1, Fire=0, Reactivity=0

**Section 2 - Physical/Chemical Characteristics**

Boiling Point:

214°F

pH @ 20°C: 12.7

Vapor Pressure (mmHg) 20°C:

17

Vapor Density (Air=1):

<1

Specific Gravity (H<sub>2</sub>O=1):

1.1420

Evaporation Rate:

<1

(n-butyl acetate=1)

Appearance and Odor:

Clear, slightly yellow liquid; odorless.

**Section 3 - Fire and Explosion Hazard Data**

Flash Point (Method Used):

>200°F (TCC) Noncombustible

Auto-Ignition Temperature:

N/A

Extinguisher Media:

Use appropriate agent for surrounding fire.

Flammable Limits (Lower/Upper):

N/A

Special Fire Fighting Procedures:

Wear self-contained breathing apparatus or protective clothing.

Unusual Fire and Explosion Hazards:

Excessive heat may cause production of sulfur dioxide vapors.

**Section 4 - Reactivity Hazard Data**

Stability:

Stable

Conditions to Avoid:

None documented to occur under normal temperature and pressures.

Incompatibility:

Strong acids and oxidizers

Hazardous Decomposition Products:

Sulfur Dioxide

Hazardous Polymerization:

Will not occur

**Section 5 - Health Hazard Data****Effects of Overexposure:****Inhalation:**

None documented but concentrated mist may irritate or damage respiratory tract and lungs.

**Eye Contact:**

Will cause irritation or burning. None documented but may cause keratitis and discoloration of the conjunctiva. Irritation such as reddening, swelling and burning may occur. Allergic skin reaction such as dermatitis is possible.

**Skin Contact:****Ingestion:**

May cause nausea, vomiting, irritation and burns to the mouth and stomach. May affect Central Nervous System in large doses.  
None identified.

**Chronic Effects:****Medical Conditions Generally****Aggravated by Exposure:****Carcinogenicity:****Reproductive Effects:**

Present skin conditions.

None identified.

None identified.

**Emergency First Aid Procedures:****Eye Contact:**

Flush with water for 15 minutes, including under lids.

Call a physician.

**Skin Contact:**

In case of contact, flush skin with water and use non-alkaline cleaner to minimize any allergic skin reaction.

**Inhalation:**

If inhaled, move to fresh air. If symptoms persists, call a physician.

**Ingestion:**

Call a physician. If swallowed and if the person is conscious, immediately give large amounts of water and induce vomiting.

**Section 6 - Control and Protective Measures****Respiratory Protection:**

None required where adequate ventilation conditions exist. If airborne concentration is higher, use an appropriate NIOSH cartridge respirator.

**Protective Equipment:**

Safety chemical goggles, gloves (latex, neoprene), eye wash stations, and uniforms are recommended.

**Hygienic Work Practices:**

Wash with plenty of soap and water after contact.

**Section 7 - Precautions For Safe Handling And Use/Leak Procedures****Precautions To Be Taken In Handling****And Storage:**

Store in sealed containers in a dry, well ventilated area away from acids. Protect containers against physical damage.

**Steps to Be Taken If Material Is Spilled or Released:**

In case of spill, flush away with large amounts of water or use a commercially available Chemical Spill Kit.

**Waste Disposal Method:**

Add water to dilute, and flush to the sewer. Large amounts may require neutralization. Follow federal, state, and local regulations.

**Other Precautions:**

Do not store food, drink, or tobacco in areas with this product.

Goes with Previous Pages.

### PROCEDURE

- Pre-soak film in water 5 seconds prior to developing . . . to soften emulsion.
- 1) Development: Immerse film directly into INSTA-NEG developer. Agitate gently and continuously for recommended time per chart.
  - 2) Rinsing: Agitate film in rinse water 3 - 5 seconds before fixing. (8 - 10 seconds is recommended for EXTRAORAL film.)
  - 3) Fixing: Immerse film into INSTA-FIX. Agitate for at least the first 10 - 15 seconds of the recommended time. Avoid prolonged fixing, which may lighten film.  
FILM IS NOW COMPLETELY FIXED AND MAY BE VIEWED FOR QUICK READING.  
HOWEVER, FILM SHOULD THEN BE WASHED TO INSURE PERMANENCE.
  - 4) Final Wash: Immerse film into water for 20 - 30 minute wash.  
(Refer to INSTRUCTION FOLDER for more detailed instructions.)

## INSTA-NEG/INSTA-FIX®

### X-RAY PROCESSING CHART

Temp.	18°	20°	22°	25°	27°	29°	C°
	64°	68°	72°	76°	80°	84°	F°
Develop	30	23	16	12	9	8	seconds
Fix	60	45	30	25	20	20	seconds

\* These times can be reduced 50% for instant readable "working" film!  
(Permanent, record-keeping film require full times shown.)  
\*\* Times shown are for intraoral film — Increase 50% for EXTRAORAL film.

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# INSTA-NEG / INSTA-FIX

## PREPARATION:

Prepared INSTA-NEG & INSTA-FIX are "ready-to-go" solutions. DO NOT ADD WATER, as these solutions are designed to function best as they come bottled.

NOTE: On shipment during winter months, possible freezing of solutions is not a problem. Freezing will not affect solution stability or performance, simply allow to thaw thoroughly and shake well before use.

1. Clean your tanks or containers well after removing worn-out solutions.

2. Fill the developing and fixing tanks directly from containers of INSTA-NEG & INSTA-FIX - making sure not to combine or other solutions with the other.

3. Take the temperature of the water surrounding the developing & fixing tanks. When small containers are used, take the room temperature. Freezing of solutions is not recommended.

4. With the temperature reading, refer to the x-ray processing chart for processing times.

## PROCEDURES

After film is added to x-ray cups or frames, you are ready to process, using times indicated on the processing chart. Refresh film in water 5 seconds prior to developing to remove emulsion.

1. Development: Immerse film into solution quickly. Start counting or timing development immediately. Give continuous gentle agitation of film in solution until developing time is up.

2. Fixing: Agitate film in fixer water 3 to 5 seconds before fixing. (8-10 seconds is recommended for the developing tank. (This prevents excessive loss of solution.)

3. Stop: Immerse immediately into fixing tank, giving a continuous gentle agitation for at least the first 10-15 seconds. When fixing time is up, remove film from fixing tank. Shake remaining fixative from film clips or frames back into fixative tank. Your film is now completely fixed.

4. Final Wash: A very important step if film is to be stored for record. Upon removal from the fixative tank, immerse film in the wash water. Give it gentle agitation for approximately 5 seconds, and then let it remain in the wash water for 20-30 minute wash. After removal from the final wash, allow the film to dry completely before archiving.

CAUTION: Use care in handling. Avoid prolonged contact with skin as solutions may cause irritation. If spilled, flush exposed areas with water.

STAINS: For stubborn developer or fixer stains not removed by normal washing, use highly recommended one PHOTO STAIN REMOVER.

X-RAY PROCESSING CHART

Temp.	Develop		Fix	
	30	45	30	45
64°	12	18	12	18
68°	15	22	15	22
72°	18	27	18	27
76°	22	33	22	33
80°	27	40	27	40
84°	33	48	33	48
88°	40	57	40	57
92°	48	67	48	67

## GENERAL INFORMATION

### TRAINING, DEVELOPMENT & FIXING:

Times shown on processing chart are minimum for best results. Exact developing timing is not critical; recommended times should be met, however a few extra seconds will not lessen quality. It's hard to over-develop INSTA-NEG. If you do not have a dual-timer second timer, the best method is to use the time listed way of counting off seconds... 1001, 1002, 1003, etc. A little practice using the second hand of a clock or watch will "make perfect".

## AGITATION:

Due to the speed involved, agitation is essential for over-all even development and permanent fixing. A gentle back & forth stirring motion is sufficient.

## REFRESHING:

When processing in one gallon or larger tanks, replenishment of the solutions with fresh chemical will extend effective tank life. As film is processed and the liquid level drops simply pour additional INSTA-NEG into the developing tank and additional INSTA-FIX into the fixative tank to maintain the original level. After each wash replenishing, be sure to stir the tanks with a glass, plastic or wooden rod. When one gallon tanks are used, up to one quart each of INSTA-NEG & INSTA-FIX may be needed for replenishment - depending upon volume of film processed.

NOTE: Unless you need to raise the liquid level in your tanks, there is no real basis for replenishing the solutions. Simply stir your tanks daily. Where liquid level in your tanks drops very slowly, you may bring tanks up to level by adding distilled water (never undiluted). However, adding distilled water will not extend tank life as will replenishment with fresh chemical. When processing in small jars, replenishment is not recommended. Simply raise up the full life of the solutions in the jars then: empty, rinse out and refill with fresh INSTA-NEG and INSTA-FIX.

## OXIDATION

Tanks show that a high percentage of chemical strength is lost due to oxidation of solutions through contact with the air. However, INSTA-NEG oxidizes at a much faster rate than does INSTA-FIX reducing exposure of solutions to air will extend their effective strength.

As INSTA-NEG developer is used, the chemical reaction of developing film coupled with oxidation will begin to turn the solution darker and darker. Even when INSTA-NEG turns jet black, excellent results will be obtained. Discard solutions when processing time does not improve image quality.

INSTA-FIX will continue to clear and fix developed film for as long as the developing solution lasts. However, the chemical strength will have diminished, become contaminated and weakened by water input of film clips and frames, and through oxidation.

INSTA-Chemicals last up to 60 days or more in tanks, depending upon the amount of film developed and care exercised (see paragraph headed OXIDATION & REPLENISHING). With proper care one filling of gallon tanks replenished as required to maintain tank level, should process up to:

## SOLUTION LIFE & PROCESSING CAPACITY:

400 or more sets (20 films each) individual film or 250 or more panoramic dental film, or the equivalent square inch area of medical film.

One filling of 6 oz. isometric sealing containers should process from 60 to 100 films before the solutions must be discarded - even if this takes weeks or months.

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INSTA-FIX will continue to clear and fix developed film as long as the developing solution lasts. However, the chemical strength will have diminished, become contaminated and weakened by water input of film clips and frames, and through oxidation.

## REFILLING TANKS:

(Also called "Changing Tanks") After emptying old solutions from tanks, scrub tanks thoroughly with soap powder or tank cleanser. Rinse thoroughly and dry tanks with clean cloth or sponges before refilling with fresh solution. Never put fixative in a tank previously used for developing solution, or vice-versa, thus avoiding contamination.

## STORAGE:

Unopened, the INSTA-NEG/INSTA-FIX solutions have a shelf life of up to one year. Store in a cool place. Refillable INSTA-FIX if kept over the month. When solution is removed from the gallon cubblers and any remainder is stored, squeeze out from the container and recap tightly. This will prevent oxidation of the remaining solution. We recommend our INSTA-Bottle Tops, which allow the cubblers to collapse as solution is dispensed.