

## HEALTH & SAFETY INFORMATION

### 1. IDENTIFICATION

#### XDS1 AND RG STARTER

Photographic developer starter solutions, added to working strength rapid processing X-ray developer replenisher solutions to maintain processing reproducibility by simulating the condition of used developer. Normally used at the rate of 25mls starter to 1 litre of working strength replenisher solution.

XDS1 and RG Starter are chemically identical. RG Starter is packed for convenient use with the Fuji RG table top processing machine.

XDS1 is packed 8x1 litre plastic bottles in a cardboard box. RG Starter is packed 12x150ml bottles in a cardboard box. The Packing Code for both products is 4G.

The product is manufactured by Photosol at the above address.

**In emergency, telephone +44 (0)1277 235456 in business hours.**

### 2. COMPOSITION

Major components are as follows. These include those defined as hazardous to health in the Control of Substances Hazardous to Health Regulations, i.e. appear in the Chemicals (Hazard Information & Packaging) (CHIP) Regulations &/or which have a maximum exposure limit or occupational exposure standard in the Health & Safety Executive document EH40. These regulations are themselves based on EC Directives of which 88/379/EEC, 67/548/EEC & 91/325/EEC are particularly relevant.

Component	CAS no.	% w/w	Symbol	Risk Phrases
Water		60		
Acetic acid	64-19-7	15	<b>Xi</b>	<b>36/38</b>
Potassium bromide	7758-02-3	<20		

### 3. HAZARDS

The most likely hazard is irritation of the skin or eyes through contact. Inhalation may irritate the upper respiratory tract. Moderately toxic by ingestion, with systemic irritant effects.

The solution is water based and contains no major environmental pollutants.

### 4. FIRST AID

*Eye Contact:* Irrigate the eyes with water for 15 minutes. Ensure all traces are washed out. Seek medical advice.

*Skin Contact:* Wash affected areas with soap and water as soon as possible. Seek medical advice if irritation persists.

*Ingestion:* Wash mouth and throat abundantly with water. Seek medical advice. Do not induce vomiting.

*Inhalation:* Remove the person to fresh air.

### 5. FIRE-FIGHTING

The solution is water-based and non-combustible. There is no explosion hazard.

## 6. ACCIDENTAL RELEASE

*Personal:* Prevent skin and eye contact. Use respiratory and other protection as Section 8.

*Environmental:* In emergency the solution can be safely disposed to foul sewer by dilution with water (see Section 12).

*Cleaning:* Excess liquid should be absorbed with sawdust, sand or proprietary methods. The acidity can be neutralised with sodium carbonate or lime. Dispose of this material via incinerator or waste contractor, and wash affected area with water.

## 7. HANDLING & STORAGE

Good general ventilation of ten or more room volume changes per hour in the work area is recommended. Storage should be at moderate temperature i.e., 5-20°C. Keep away from strong acids and alkalis.

## 8. PERSONAL PROTECTION

In the event of spillage, or when working in close proximity to the solutions (e.g. processor maintenance and cleaning), wear protective clothing. This should comprise an overall, rubber gloves, safety goggles to BSEN166-3S and a half-mask respirator fitted with an ABEK1 filter which protects against all fumes likely to be encountered in processing areas including acid gases (such as acetic acid and sulphur dioxide), and ammonia (which may be released if developer and fixer mix).

## 9. PHYSICAL & CHEMICAL PROPERTIES

<i>Appearance</i>	clear, colourless liquid
<i>Odour</i>	vinegary
<i>pH</i>	1.7
<i>Boiling point</i>	>100°C
<i>Melting point</i>	none
<i>Flash point</i>	none
<i>Explosive properties</i>	none
<i>Oxidising properties</i>	none
<i>Vapour pressure</i>	not determined
<i>Specific gravity</i>	1.13
<i>Water solubility</i>	complete
<i>Octanol/water partition</i>	not determined

## 10. STABILITY & REACTIVITY

The solution is stable and will not polymerise. It is moderately acid and will react vigorously with strong alkalis. Thermal decomposition will yield carbon dioxide, carbon monoxide and inorganic particulates.

## 11. TOXICOLOGICAL

The table summarises data for the hazardous components identified in Section 2.

	<b>Oral-rat LD<sub>50</sub></b>	<b>Occupational Exposure Standard *</b>
<i>Acetic acid</i>	3310mg/kg	10ppmv

mg – milligram

kg – kilogram

\* the lowest applicable (usually long-term)

ppmv – parts per million by volume

LD<sub>50</sub> – calculated dose to kill 50% of a population of rats when taken in food or drink

Acetic acid makes the solution mildly acidic and it may cause skin and eye irritation through contact. Slow release of the vapour may irritate the upper respiratory tract.

## 12. ECOLOGICAL

The product contains no substances classified as dangerous for the environment. Both components of the solution are highly soluble in water and any effects on the environment will be swamped by dilution and natural buffering.

The theoretical oxygen demand of the solution is **178,000mg/litre**.

## 13. DISPOSAL

Heavy dilution with water will reduce the COD and moderate the pH to the extent it can be discharged to sewer and meet any likely trade effluent consent. The product is classified 'Special Waste' if removed by waste contractor. Empty bottles should be rinsed for safety and to facilitate recycling. Incineration is not energy efficient as the solution is largely water, but otherwise is a satisfactory method for disposal.

## 14. TRANSPORT

The product is classified non-hazardous for conveyance by Sea (IMDG) and is exempt (due to its small-volume packaging) from the UK Carriage of Dangerous Goods by Road & Rail (Classification, packaging & labelling) Regulations and exempt from international conveyance by road (ADR) & rail (RID) regulations. It is hazardous for conveyance by air and will require repacking for this mode of transport.

## 15. REGULATORY INFORMATION

The product is insufficiently hazardous to be regarded as dangerous in accordance with the Code of Practice for Classification, Packaging and Labelling of Photographic and Lithographic Processing Chemicals (European Photochemical Industry, Sector Group of CEFIC) which complies with but extends the regulations listed in Section 2 above.

<b>Symbol</b>	<b>Dangerous Substance</b>	<b>Risk Phrases</b>	<b>Safety Phrases</b>
Xi	Acetic acid	36/38	2-26

## 16. OTHER INFORMATION

Relevant risk and safety phrases are as follows:

<i>Risk</i>	–	<b>36/38</b>	Irritating to eyes and skin
<i>Safety</i>	–	<b>2</b>	Keep out of reach of children
	–	<b>26</b>	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

The symbol '**Xi**' means 'irritant'.