Effluent from Darkrooms

The Water Industry Act 1991 requires all commercial operations to obtain a consent to discharge from their local Water Company in respect of effluent, other than domestic waste.

Effluent from non-trade premises, eg. Schools & Colleges, Police Photo Units, Hospital Medical Photo & Xray Units, Dental & Veterinary, are not covered by this act but the photo process chemicals used in trays may be poured into containers (fixer & developer separately) for removal by a licensed contractor for silver conservation <http://www.wastecare.co.uk>

Amateur Darkrooms - Photographic waste from amateur users is not covered by the waste regulations; it is considered domestic waste.

From Print Wash .....
water from the print wash contains traces of silver as a non-toxic, stable complex of thiosulphate in concentrations ranging from less than 1 milligram per litre

From rinsing down spillages and in cleaning up the wet bench or sink the water will contain traces of any of the following ....

Fresh Developer contains Hydroquinone 2-5% w/w and Potassium Hydroxide 2-5% w/w

The hydroquinone is consumed during the process and spent developer is not considered hazardous.

Some developers - such as Fotospeed HF3 Print Developer contain no Hydroquinone

Fresh Fixer contains ammonium thiosulphate as the principal ingredient

Example: Amfix (Champion)... Ammonium Thiosulphate 45-55%w/w
Ammonium Acetate 5-10% w/w
Sodium Bisulphate 2-5% w/w/
Boric Acid 2-5% w/w

Working strength solutions diluted 1:3 or 1:9

Used fixers typically contain 3000-8000 ppm of silver in the form of silver thiosulphate

Sepia Toner 2 part process "A" stage sol'n with 5% Potassium Hexacyanoferrate,
(Kentmere) 2% Potassium Bromide
0.2% Sodium Hydroxide

B" stage solution with 0.2% Thiourea
4% Potassium Bromide
0.2% Sodium Hydroxide

Issues with Fixers.

The clarification process in municipal sewage works converts the silver thiosulphate in fixer into insoluble silver sulphide which precipitates in the sludge. Sludge containing silver sulphide could be used on agricultural land with no adverse effect. When silver sulphide is present in discharges from sewage works, to a watercourse, there should be no effect on fish/aquatic life.

There is no analytical test procedure, reliable enough to be accepted by Regulators, that can differentiate the free silver ion(Ag+), which can destroy the micro-organisms essential to the sewage works and which is toxic to aquatic life, from the harmless silver sulphide and silver thiosulphate.

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This is my personal assessment of the waste issue - any comments or advice please contact - Norman C. Richards ... norman@richards.uk.com