

Indanedione-zinc (IND-Zn) reagent for development of latent fingerprints on paper

IND-Zn reagent is suitable for porous and semi-porous surfaces. IND-Zn reacts with amino acids and proteins producing a compound that is highly luminescent at room temperature.

Note: All IND solutions must be kept in dark, tightly sealed bottles away from direct light. The ingredients, concentrations, preparation and expire dates should be indicated on the bottle label.

Preparation of IND-Zn Working Solution for normal paper in one step

IND working solution, 1 litre	Zinc Chloride stock solution, 200 ml
0.8 g Indanedione dissolve in 90 ml Ethyl Acetate , then add 10 ml Acetic Acid (glacial), then add 900 ml HFE 7100 carrier, then add 4 ml Zinc Chloride Stock solution	8.0 g Zinc Chloride dissolved in 200 ml Absolute Ethanol Shelf life is indefinite.

IND concentration = 0.8×10^{-3} g/ml; Polar solvent concentration = 10% V/V.
ZnCl₂ concentration = 0.16×10^{-3} g/ml.

Shelf life, if properly stored, is at least 6 months. Store at room temperature in a brown bottle in the dark.

Preparation of IND-Zn working solution for normal paper in two steps

Preparation of IND and zinc chloride stock solutions

IND Stock solution, 500 ml	Zinc Chloride stock solution, 200 ml
4.0 g Indanedione dissolve in 450 ml Ethyl Acetate , then add 50 ml Acetic Acid (glacial)	8.0 g Zinc Chloride dissolve in 200 ml Absolute Ethanol Shelf life is indefinite.

Shelf life, if properly stored, is one year.

Note: The IND stock solution does not contain zinc. Zinc has to be added when the working solution is prepared!

Preparation of IND-Zn Working Solution

1. Measure required quantity of IND stock solution according to volume of working solution r to be prepared.
2. Pour this amount into appropriate bottle.
3. Measure the required HFE quantity, then slowly pour this into the bottle containing the IND stock solution. Mix well.
4. Add the required quantity of zinc chloride stock solution, then mix well.

IND-Zn working solution, 0.5 litres	IND-Zn working solution, 1 litre
50 ml IND stock solution mix with 450 ml HFE Carrier Solvent , then add 2 ml Zinc Chloride stock solution	100 ml IND stock solution mix with 900 ml HFE Carrier Solvent , then add 4 ml Zinc Chloride stock solution

IND concentration = 0.8×10^{-3} g/ml; Polar solvent concentration = 10% V/V
ZnCl₂ concentration = 0.16×10^{-3} g/ml.

Shelf life, if properly stored, is at least 6 months. Store at room temperature in a brown bottle in the dark.

Development procedure

1. Pre-heat 'ELNA' press (155-160 degrees) or a clothing iron.
2. Treat documents with IND-Zn working solution
3. Air dry documents.
4. Immediately (no later than 2 minutes) put treated documents in 'ELNA' press for 10 seconds (or iron on for 20 seconds with constantly moving the iron).
5. Record all developed prints.
6. Store treated documents in sealed plastic bags with labels 'CAUTION-EVIDENCE CHEMICALLY TREATED'.

If a hot press (iron) is not available IND treated exhibits can be developed in an oven for 5 -10 minutes at 100 degrees.

Please note: Development at 155-160 degrees for 10 seconds will produce better results than development in an oven at 100 degrees for 3-5 minutes.

Indanedione-zinc (IND-Zn) reagent for development of latent fingerprints on thermal paper.

Preparation of thermal IND-Zn reagent

Thermal IND-Zn working solution, 1 litre	Zinc Chloride stock solution, 200 ml
0.35 g Indanedione dissolve in 40 ml Ethyl Acetate , then add 960 ml HFE Carrier Solvent , then add 4 ml Zinc Chloride stock solution	8.0 g Zinc Chloride dissolved in 200 ml Absolute Ethanol Shelf life is indefinite. ZnCl ₂ concentration = 0.04 g/ml

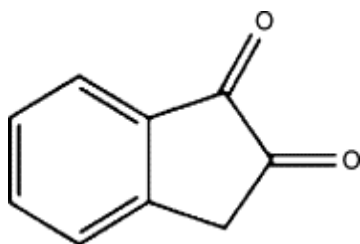
IND concentration = 0.35×10^{-3} g/ml; Polar solvent concentration = 4% V/V
ZnCl₂ concentration = 0.16×10^{-3} g/ml.

Shelf life, if properly stored, 1 year. Store at room temperature in a brown bottle in the dark.

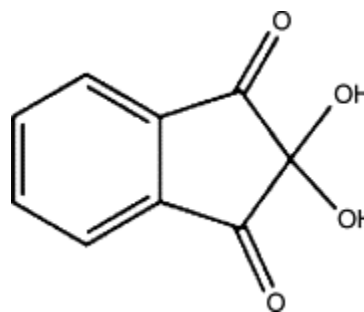
Development procedure

1. Treat 'thermal' documents with thermal IND-Zn solution
2. Air dry documents.
3. Examine documents in 24 hours. If weak prints are noticed, examine again in 48 hours (IND-Zn will react further and prints may improve).
4. Record all developed prints.
5. Store treated documents in sealed plastic bags with labels 'CAUTION-EVIDENCE CHEMICALLY TREATED'.

Caution: No heat to be applied on thermal documents. Treated documents are left for self-development at room temperature!



Indanedione



Ninhydrin