Technical Procedure for Small Particle Reagent (SPR)

1.0 Purpose - This procedure describes how to make the SPR solution and apply it to items of evidence.

2.0 Scope – This procedure applies to moist or wet porous and nonporous items of evidence that are to be examined for the presence of latent prints. This procedure may also be used in processing the exterior of vehicles, window frames, weapons, etc. even if the item is, or has been, exposed to rainy conditions. Plastic items such as PVC, Mylar, Polyethylene and waxed paper are good items for the use of SPR.

3.0 Definitions

- **SPR:** Small Particle Reagent

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Protective coat and gloves
- Face shield visor and/or safety goggles
- Respirator (for outside laboratory use, only)
- Spray bottle
- Camera/scanner
- Fume hood
- Lifting tape/lift cards

4.2 Reagents

- Black and white SPR prefilled capsules

5.0 Procedure

5.1 Mixing Procedure

5.1.1 Choose the black or white SPR prefilled capsule based on background color of the item being processed.

5.1.2 Add one (1) capsule to six (6) ounces of water and shake thoroughly.

5.1.3 Additional SPR solution can be made, if needed.

5.2 Application Procedure

5.2.1 Spray Method - Generously spray SPR solution onto surface area and rinse with tap water.

5.2.2 The detail and clarity produced by the black particle adhesion is excellent and shall be photographed according to the Photographic Equipment Procedures. The Small Particle Reagent will act like a fingerprint powder once allowed to completely dry and may be lifted with powder lifting techniques (see Section Powder Processing Procedure).

5.3 Standards and Controls - Forensic Scientists shall produce a self-made test print to be processed concurrently with items of evidence.

5.4 Calibration - N/A

5.5 Sampling – N/A

5.6 Calculations – N/A

5.7 Uncertainty of Measurement – N/A

6.0 Limitations - The reagent is an aqueous suspension of molybdenum disulfide which is very lipid sensitive.

6.1 The working solution is for one time use. Discard any remaining solution and do not store.

6.2 The solution shall be thoroughly agitated prior to use.

6.3 SPR may be also be used on surfaces which have no indication of being wet or having been exposed to moist environmental conditions.

7.0 Safety - Molybdenum disulfide is a possible mutagen and there is a possible risk of irreversible effects. It must be handled with extreme care. The dust is harmful when inhaled, when in contact with skin and when swallowed. Do not breathe dust. Always mix chemicals in a fume hood. If mixing this chemical in the field, wear a respirator. Wear protective clothing, gloves and eye/face protection. Forensic Scientists who are, or may be, pregnant shall not be exposed to this chemical. See MSDS for complete information and safety precautions.

8.0 References

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9.0 Records – N/A

10.0 Attachments – N/A

Revision History

Effective Date	Version Number	Reason
09/17/2012	1	Original Document
10/31/2013	2	Added issuing authority to header
03/30/2017	3	Header Update – Removed Digital reference.
01/19/2018	4	Updated issuing authority in header 5.1.1 & 5.3 – Moved requirement for test print to "Standards and Controls."