



## Product Information

### Sudan III

Product Number **S 4131**  
Store at Room Temperature

Replacement for Product Number 19,811-0

#### Product Description

Molecular Formula:  $C_{22}H_{16}N_4O$

Molecular Weight: 352.4

CAS Number: 85-86-9

$\lambda_{max}$ : 508-512 nm (ethanol)<sup>1</sup>

Color Index Number: 26100

Synonyms: Sudan G; Tony Red; Scarlet B fat soluble;  
Fat Ponceau G; Oil Red AS, O, B, or 3B; Cersain Red;  
Sudan Red BK<sup>1</sup>

Sudan III is a lysochrome (fat soluble dye) predominantly used for staining triglycerides in animal tissues (frozen sections), but it may also stain some protein bound lipids in paraffin sections.<sup>1</sup> It is also used by botanists together with Light Green SF Yellowish, for differentiating suberized and cutinized tissue in plants.<sup>2</sup> It is less popular than Oil Red O as it has a more orange shade. A saturated solution in isopropanol is prepared for use as a fat stain in animal tissue.<sup>3</sup>

Sudan III is neutral and lipophilic. It is synthesized by coupling diazotized p-phenylazoaniline to 2-naphthol.<sup>4</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in chloroform or toluene (1 mg/ml). It is also soluble in water (< 0.1 mg/ml) and ethanol (2 mg/ml). Saturated solutions can be prepared in isopropanol.

#### Procedure

To stain fat in animal tissue sections:<sup>4</sup>

1. Prepare a saturated stock solution of Sudan III in 99% isopropanol. Dilute 6 ml of the stock solution with 4 ml of water. Incubate for 5-10 minutes and then filter the solution. The filtrate can be used for several hours.
2. Stain thin frozen sections for 10 minutes with the diluted stock solution of Sudan III.
3. Wash the sections with water.
4. Counterstain for 5 minutes in acid alum hematoxylin of approximately 0.1% strength.
5. Place in 1% aqueous  $Na_2HPO_4$  or in water, until a blue color is seen.
6. Mount using a suitable aqueous mounting medium.

Fats will appear yellow orange in color and the nuclei will appear blue. The cytoplasm will appear green.

#### References

1. Conn's Biological Stains, 9th ed., Lillie, R. D., Williams and Wilkins (Baltimore, MD: 1977), p 168.
2. Bugnon, M.P., Sur une nouvelle methode de coloration elective des membranes vegetales lignifiees. C. R. Acad. Sci. (Paris), **268**, 62-64 (1919).
3. Staining Procedures, 4th ed., Clark G., ed., Williams and Wilkins (Baltimore, MD: 1981), pp.189, 194, 322.
4. The Sigma Aldrich Handbook of Stains, Dyes, and Indicators, Green, F. J., ed., Aldrich Chemical Company, Inc. (Milwaukee, WI: 1991), p. 656.

CMH/NSB 9/03

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