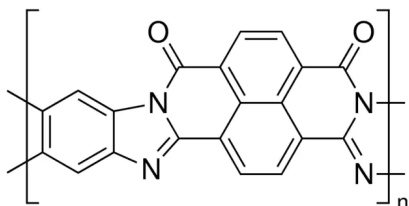


PSample Name:

Poly(benzimidazobenzophenanthroline)

Sample #: **P45233A-BBL**

Structure:



$C_{20}H_6N_4O_2$

Mol. Wt.: 334.3

C, 68.2; H, 2.27 N, 15.9; O, 13.6

Composition:

Intrinsic Viscosity in CH ₃ SO ₃ H
1.8 dl/g

Synthesis Procedure:

Procedure used as reported in literature: F.E Arnold and R. L VanDeusen, Macromolecules, 2, 497, 1969

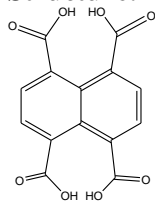
Monomers used in the synthesis of
Poly(benzimidazobenzophenanthroline):

Sample Name:

1,4,5,8-NAPHTHALENETETRACARBOXYLIC
ACID

Sample #: Naphth-4COOH Lot# P44148-
Naph4COOH

Structure:



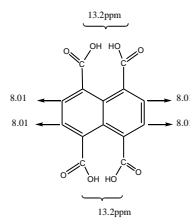
Composition: purity > 90% (from NMR)

Impurities: Naphthalene or naphthalene anhydride

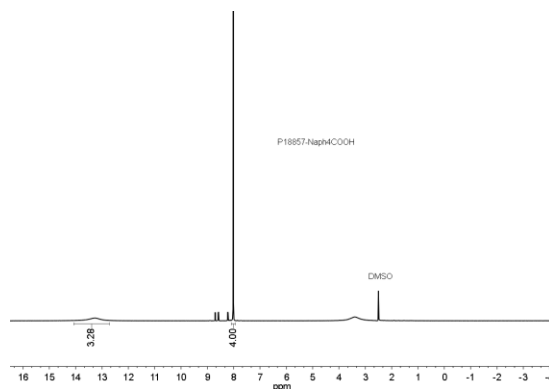
Formula: C₁₄H₈O₈

Mol. Wt.: 304.2

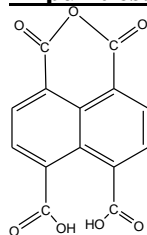
C, 55.27; H, 2.65; O, 42.07



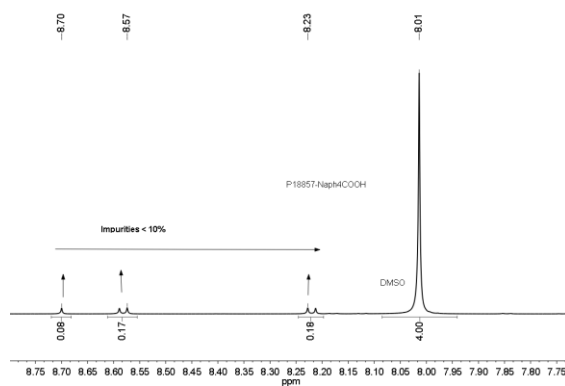
H NMR of 1,4,5,8-NAPHTHALENETETRA
CARBOXYLIC ACID in DMSO: (lot#18857)



Impurities:



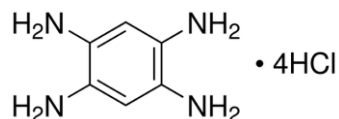
H NMR of 1,4,5,8-NAPHTHALENETETRA
CARBOXYLIC ACID in DMSO:



Sample Name:

1,2,4,5-Tetraaminobenzene tetrahydrochloride

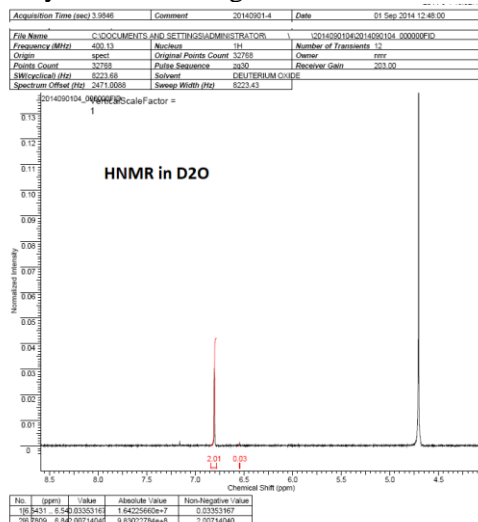
Sample #: BZ4NH₂ Lot# P43699-Bz4NH₂.HCl

Structure:

CAS: 4506-66-5

Color: Ivory color

Solubility in water: 25mg/ml

**FTIR of the polymer in KBr pellet**

FTIR of the product is similar as reported in the literature : F.E Arnold and R. L VanDeusen, Macromolecules, 2, 497, 1969
For high molecular weight polymer.

Characterization:

The product was characterized by:

1. Intrinsic viscosity in CH₃SO₃H
2. Elemental analysis
3. FTIR on KBr powder

Solubility:

1mg / 1ml methane sulfonic acid clear pink color solution.

Solution Viscosity of the polymer in CH₃SO₃H:

Intrinsic viscosity measurement (dl/g) CH₃SO₃H
at 25 °C 1.8 dl/g

Elemental Analysis:**Theoretical Values:** C₂₀H₆N₄O₂

C	H	N	O
68.2	2.27	15.9	13.6

Values found: C₂₀H₆N₄O₂

C	H	N	O
59.35	2.15	11.5	To follow