An Experimental and Computational Investigation of the Elusive Anhydrous form of Oxyma-B

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Electronic Supplementary Information

1.- Characterization of the synthesis product of Oxyma-B

Figure S1: DSC of Oxyma-B (synthesis product) at a heating rate of 10 ºC/min.

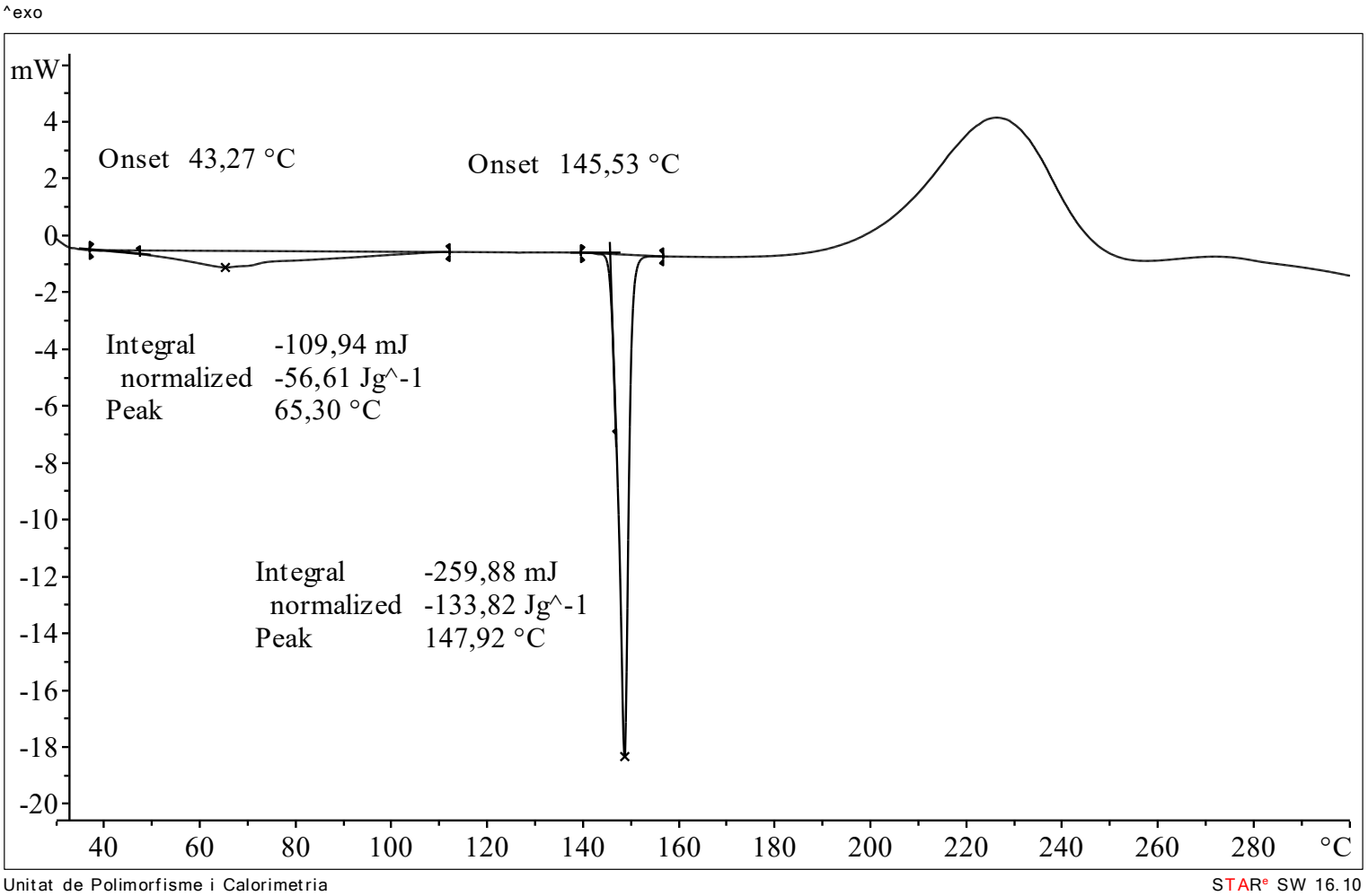


Figure S2: TGA of Oxyma-B (synthesis product).

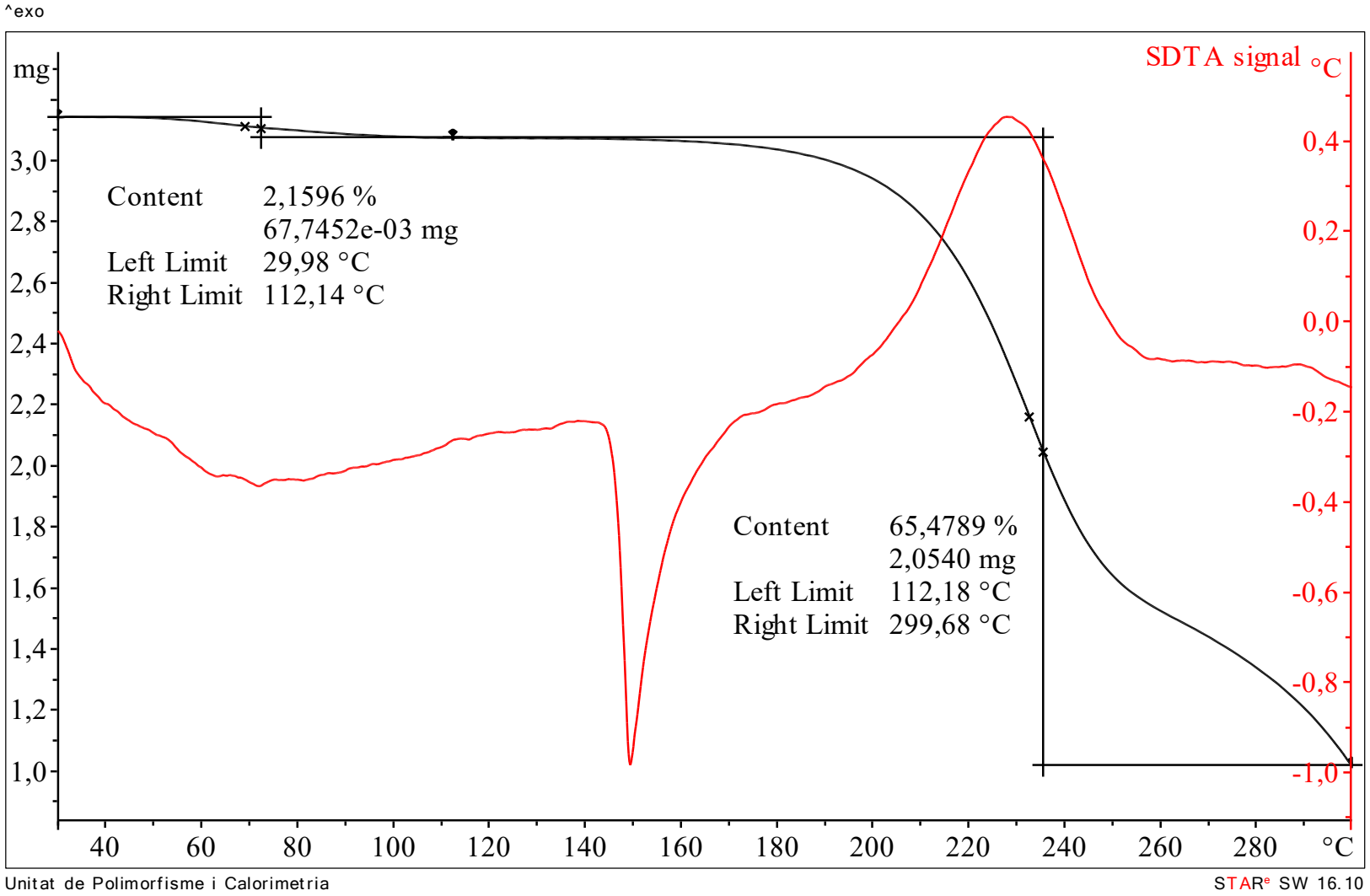


Figure S3: XRPD of Oxyma-B (synthesis product).

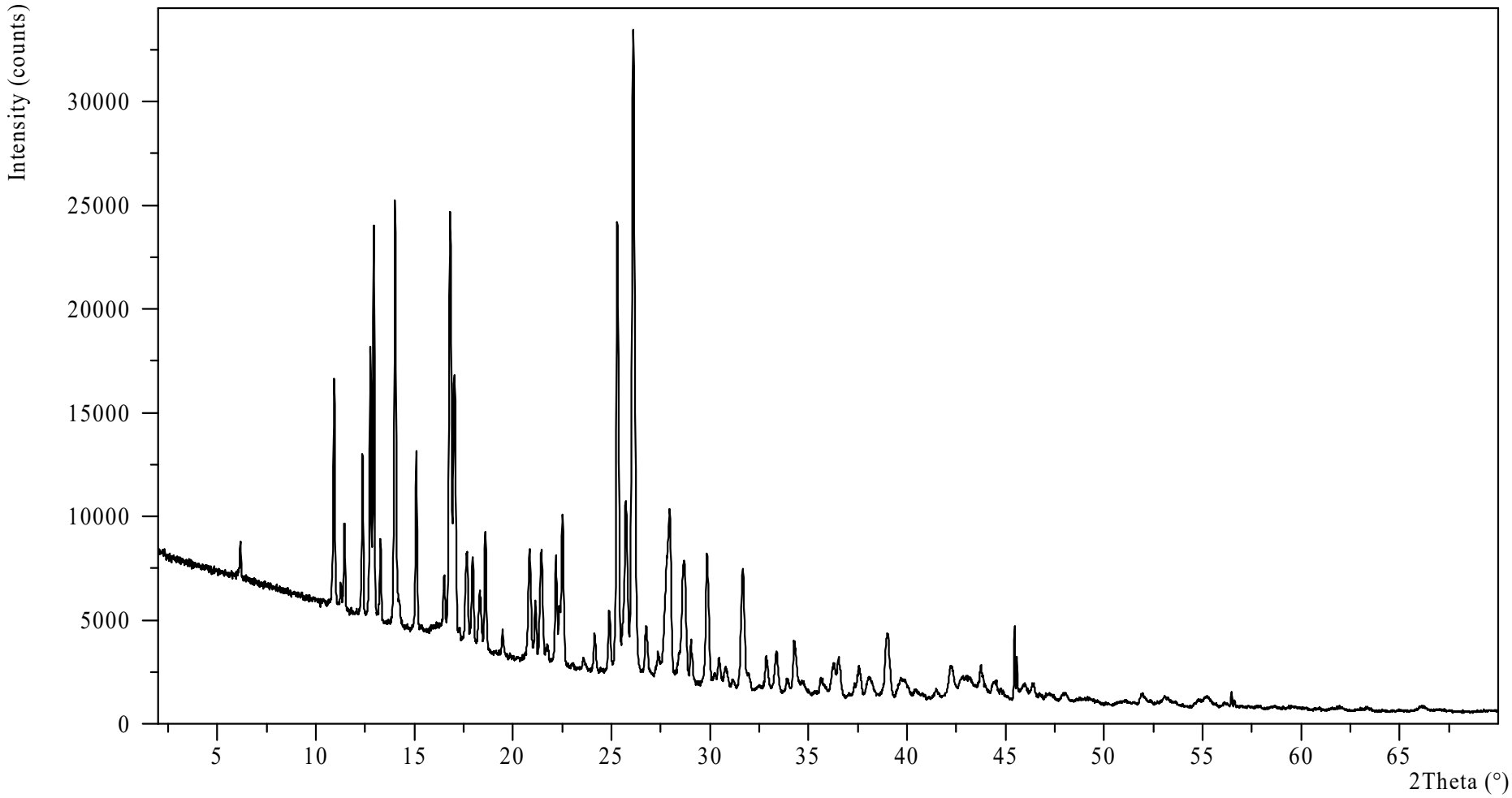


Figure S4: Comparative XRPD diffractograms of Oxyma-B (synthesis product) bulk powder (black) and monohydrate Oxyma-B (CCDC refcode WOWFUL) simulated from the cif file (green).

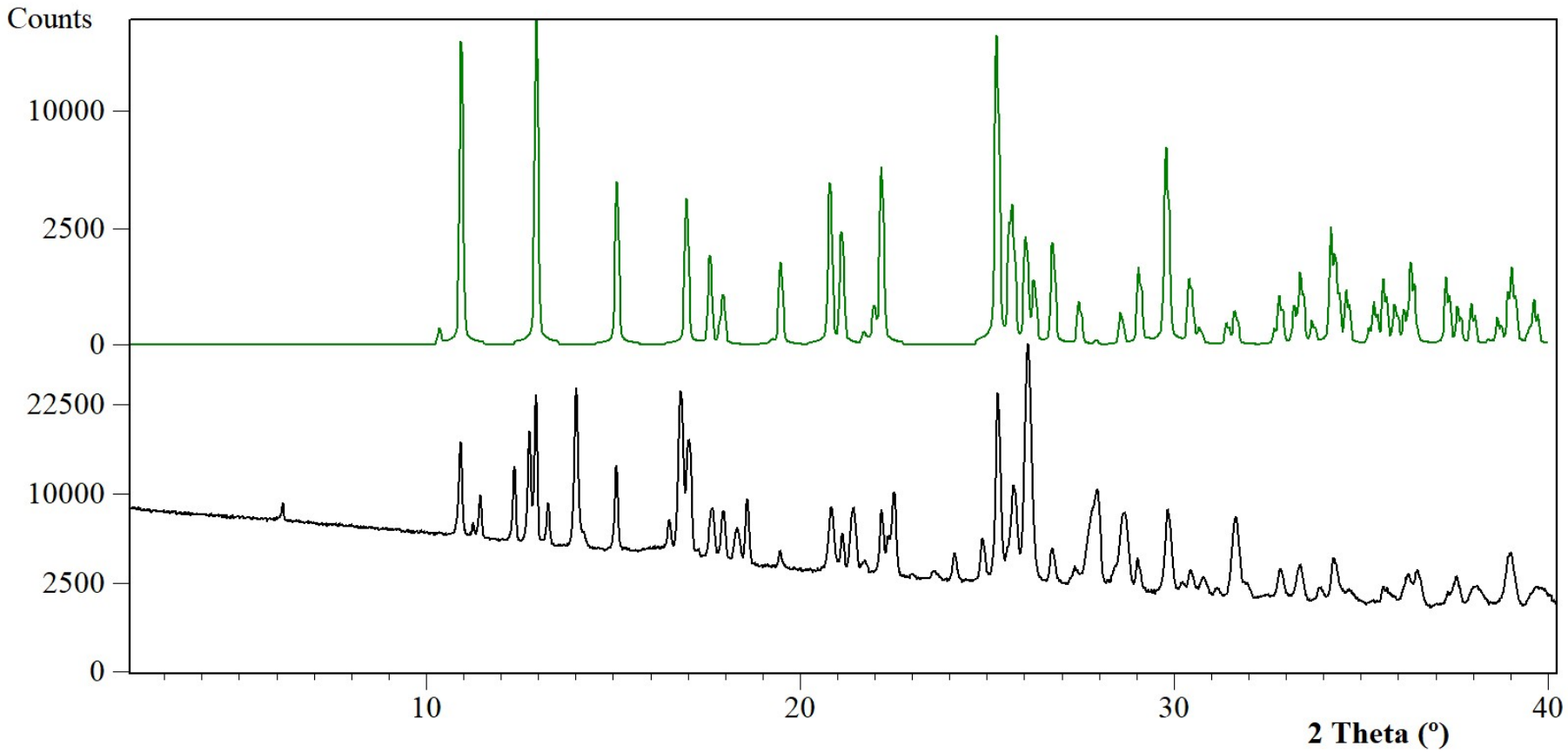


Figure S5: DSC of Oxyma-B (synthesis product) at a heating rates of 10 ºC/min and 1 ºC/min.

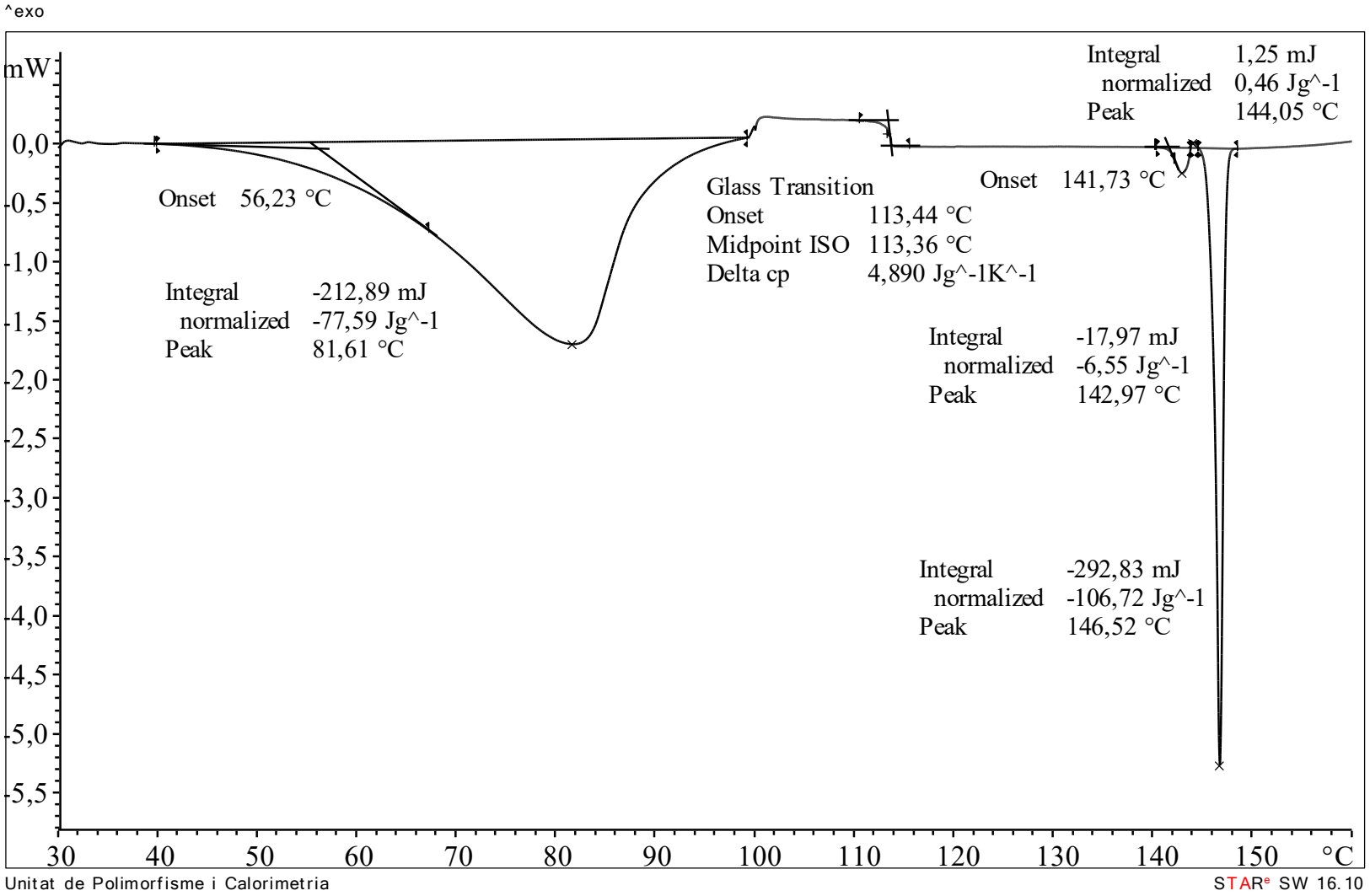


Figure S6: ADSC modulated heat flow curve of Oxyma-B (synthesis product) at a heating rate of 1 ºC/min with a modulation period and an amplitude of 60 s and 1 °C, respectively.

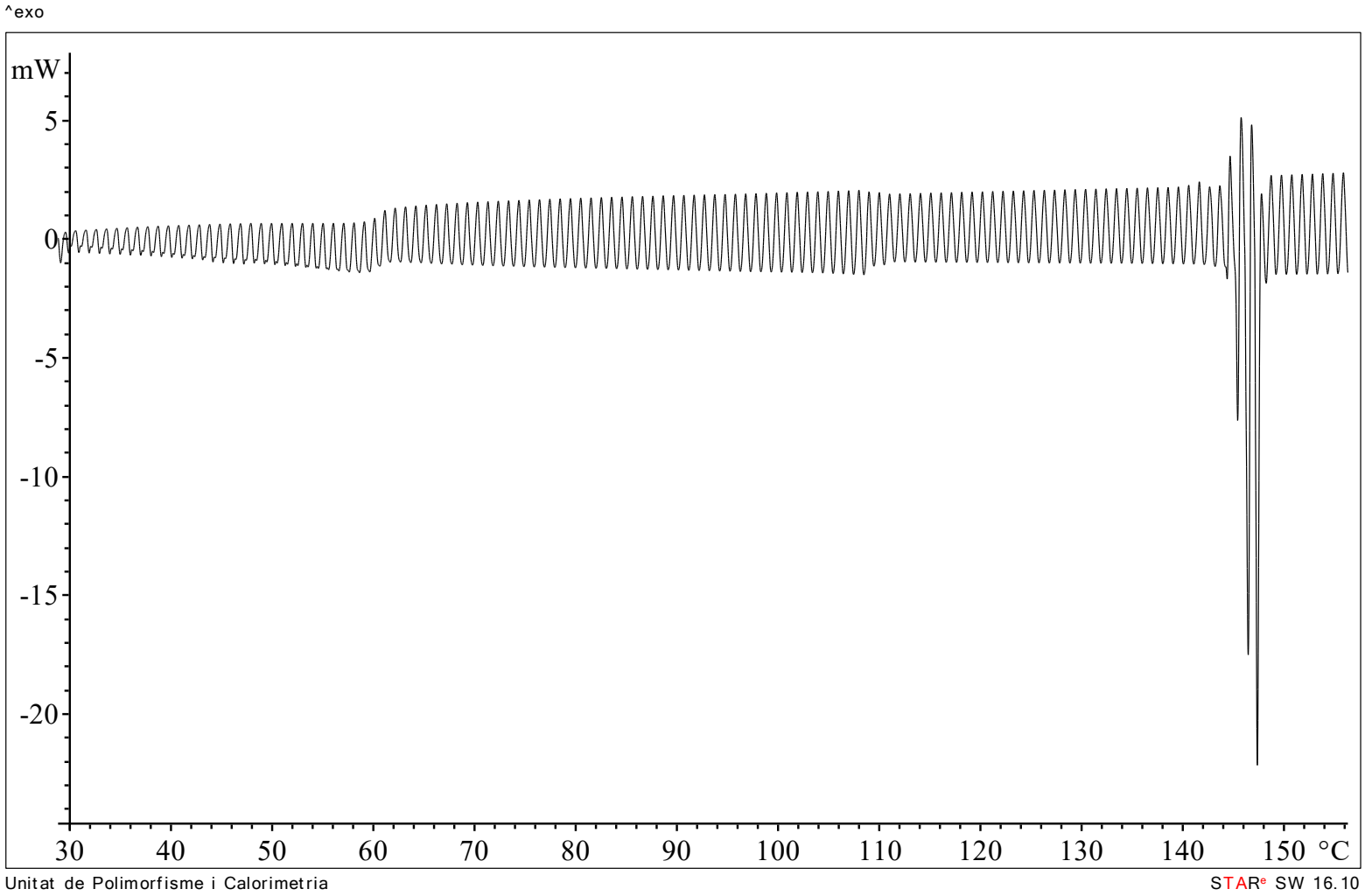


Figure S7: DVS sorption curves (a) and DVS isotherms (b) of Oxyma-B (synthesis product).

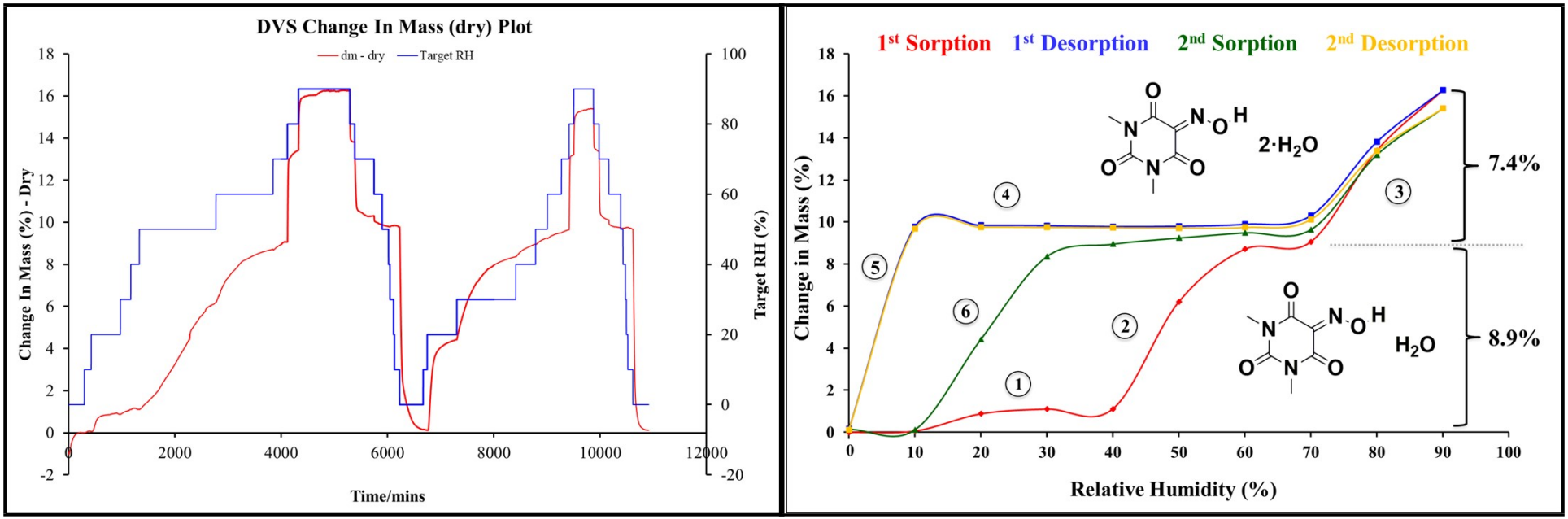
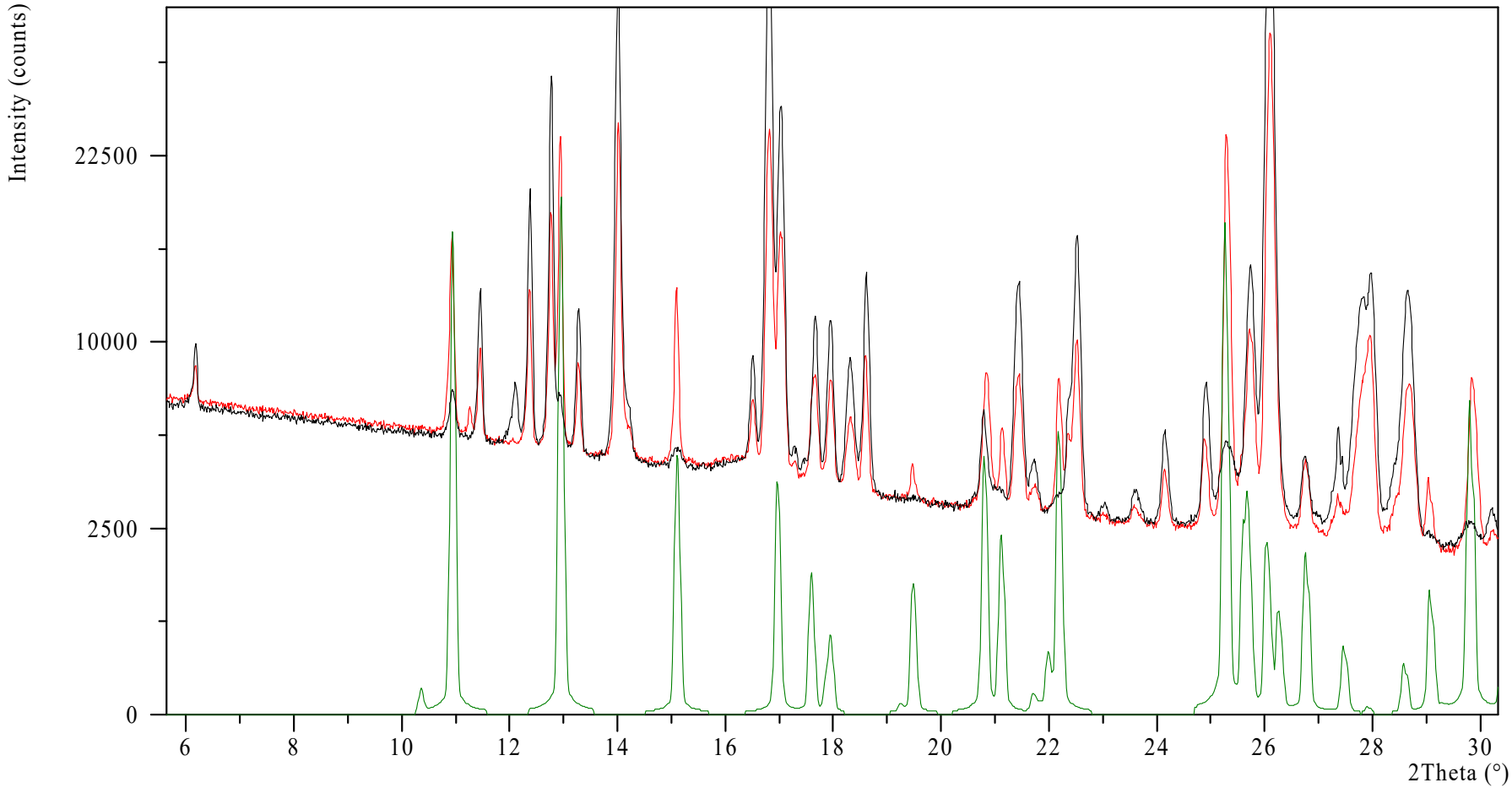


Figure S8: Comparative XRPD diffractograms of Oxyma-B (synthesis product) bulk powder (red), Oxyma-B (heated until 125 ºC during 10 minutes) powder (black) and monohydrate Oxyma-B (CCDC refcode WOWFUL) simulated from the cif file (green).



2.- List of 30 solvents used in the crystallization battery at 25 ºC

Methanol, ethanol, IPA, butanol, formic acid, ethylene glycol, dimethyl ethylene glycol, benzyl alcohol, ACN, MEK, acetone, MiBK, water, DMF, DMSO, AcOEt, THF, dioxane, dichloromethane, chloroform, acetic acid, NH_3 (32 %) in water, diethylamine, toluene, xylene, heptane, cyclohexane, pentane, diethyl ether and diisopropyl ether.

3.- Structure Determination from Direct Space Methods

Figure S9: PRF plot showing the Le Bail fit of the XRPD pattern of anhydrous Oxyma-B. The plot shows the experimental powder XRD profile (red marks), the calculated powder XRD profile (black solid line), the difference profile (blue, lower line) and Bragg positions (green lines).

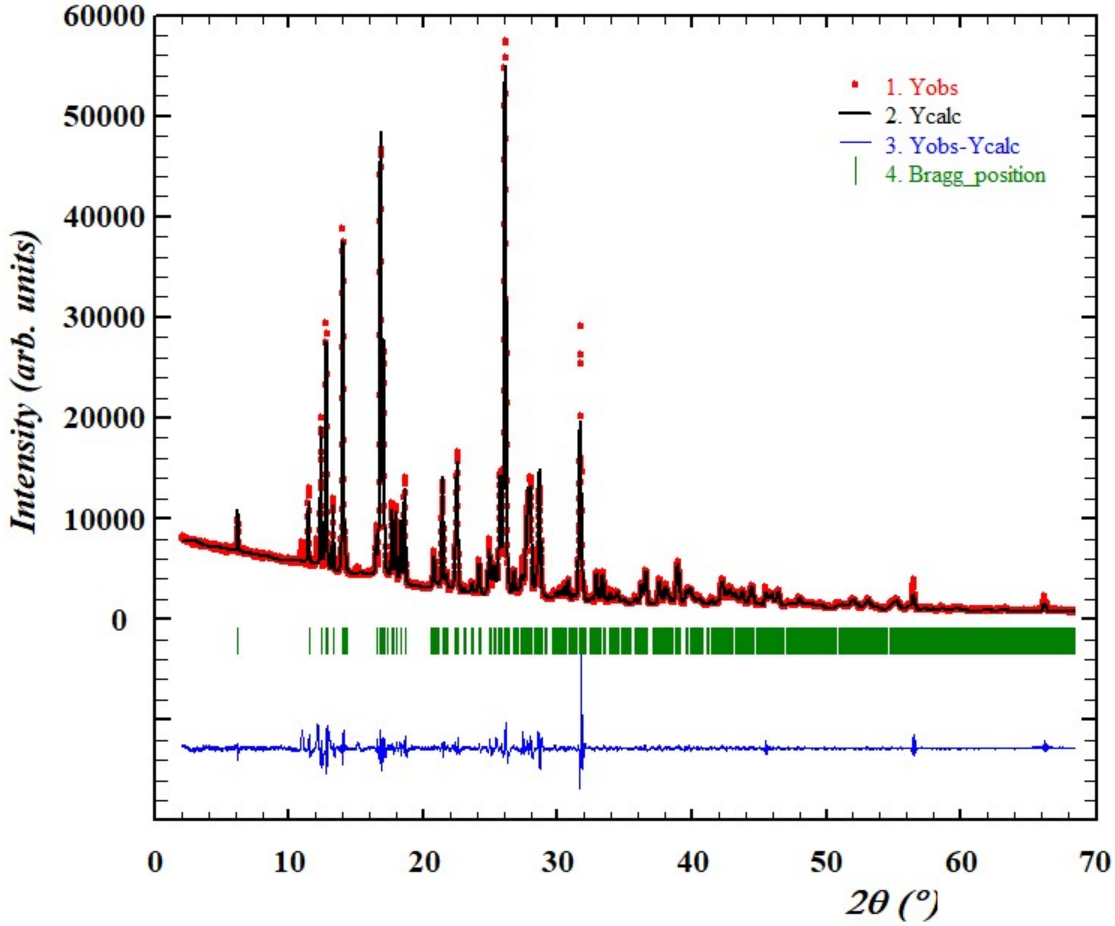
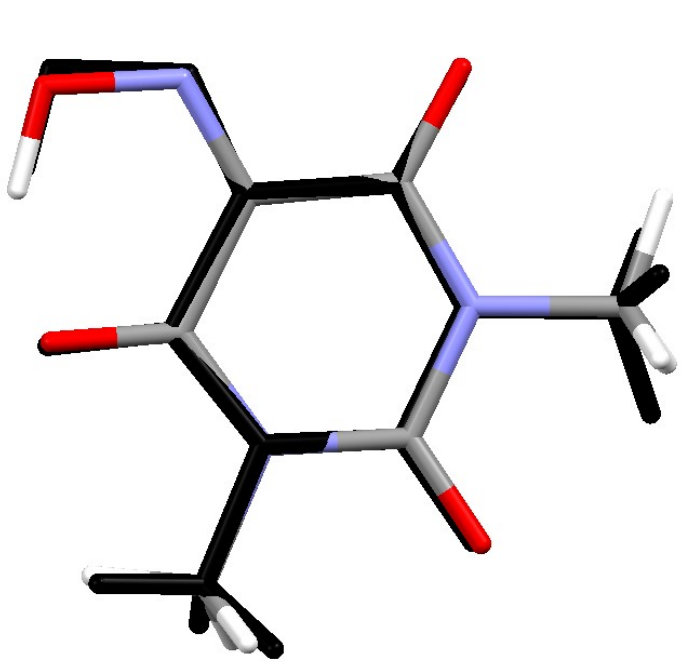
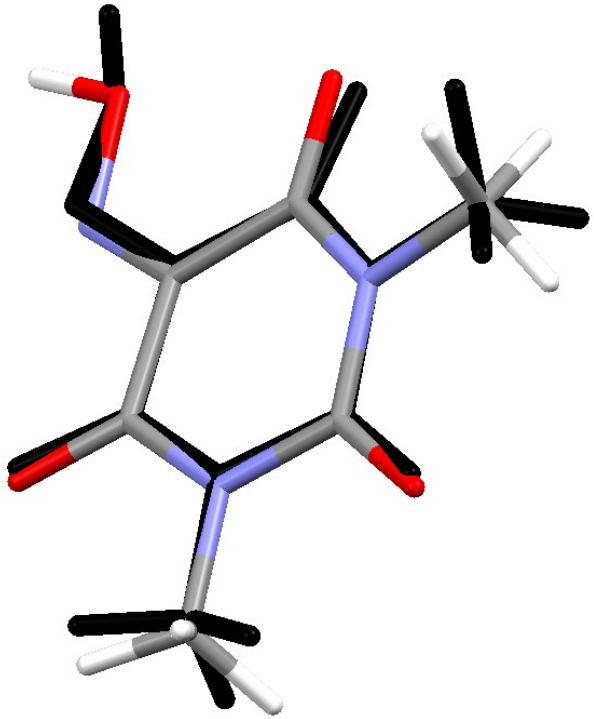


Figure S10: Overlay of the asymmetric unit molecules between the best FOX solution (black) and DFT-D with fixed cell parameters (colour by Element)

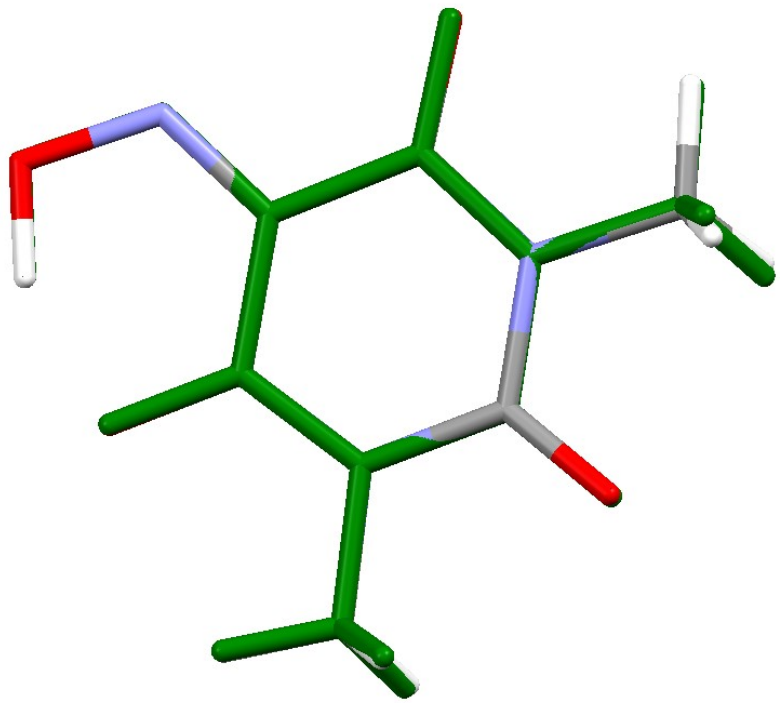


Molecule 1

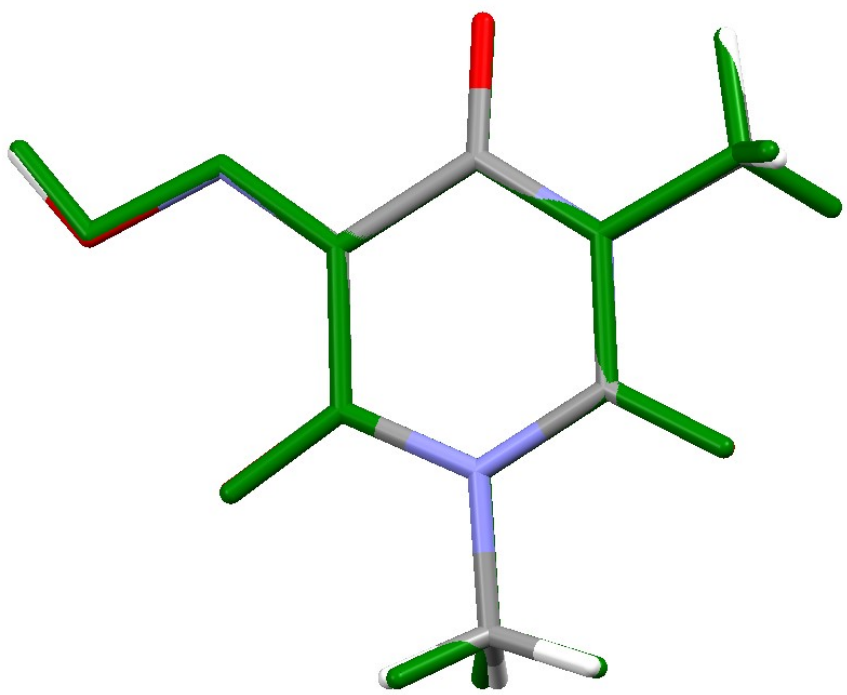


Molecule 2

Figure S11: Comparative of asymmetric unit molecules: final cif deposited (colour by Element) and after validation procedure (green) with DFT geometry optimization



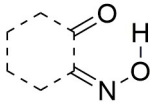
Molecule 1 (RMSD: 0.0391)

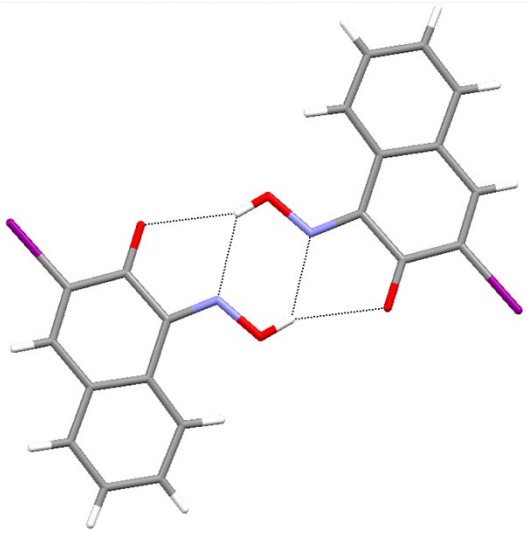


Molecule 2 (RMSD: 0.0267)

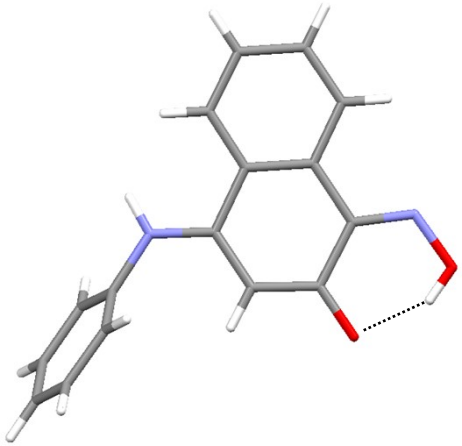
4.- CSD survey of supramolecular synthons

Table S1. List of CSD refcodes showing the supramolecular synthons searched. Search filters of structures containing only determined atomic coordinates and without organometallic compounds have been applied. Supramolecular synthon $R_1^2(5)$ (blue), intramolecular $R_1^1(6)$ interaction motif (red) and molecules with conformation as molecule 2 but showing different intermolecular interactions (black).

Search	
 --- means any bond	
CCDC	
CAGFOJ	NTSHQS
BNPQOX	**PBZQOX**
CLEBQI	**SNQUOX**
DOXROX02	SNQXSO
DOXROY	UJESEH
FAGYUL	**VIRDEH**
GEXQOR	**XOHMUC**
KNQXSO	**XOHNAJ**
MNTRPH	YIBGIZ
MURJEQ	**YIBGOF**
NANGEO	ZAMKIH
NQOXSK	**ZATKUA**
NQXSLA	**ZIVJAP**
NQXSNK	ZIVJET



CAGFOJ



GEXQOR