

Dissolution of sugar in vinegar

Description

In this experiment students dissolve sugar in vinegar.

Safety

See hazards in Table 1.

Greenness assessment

For the assessment Green Star (GS) is used, results in Fig. 1.

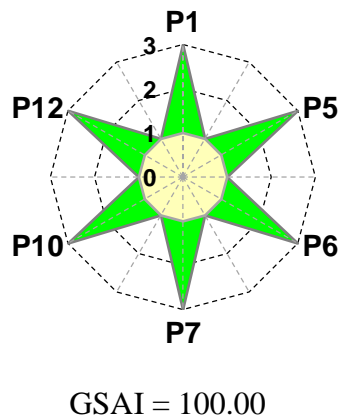


Figure 1. Greenness assessment (GS)

Construction of GS

In Table 1 are presented the hazard codes and the classification of hazards and in Table 2 the components and punctuations to construct the GS.

Table 1. Hazards of materials used^a

Reagents	Hazard codes	Score: hazards to...		
		H	E	P
Reagents				
Sugar ^{b,c}	-	1	1	1
Vinegar ^{b,c}	-	1	1	1
Waste				
Sugar in vinegar ^{b,c}	-	1	1	1

^aH – Health; E – Environment; P –Physical; - not present.

^bRenewable

^cDegradable

Table 2. Scores (S) used to construct the Green Star

Green Chemistry Principle	S	Explanation
P1 Prevention	3	Waste is innocuous
P5 Safer solvents and auxiliary substances	3	No solvents or auxiliary substances
P6 Increase energy efficiency	3	Room pressure and temperature
P7 Use renewable feedstocks	3	All substances used (water excluded) are renewable
P10 Design for degradation	3	All substances are degradable to innocuous products
P12 Safer chemistry for accident prevention	3	No indication of hazards

References

Antunes, C. M.; Costa, A.; Ferreira, F. *Laboratorium 7- Ciências Físico-Químicas* Areal Editores, S.A, Porto, 2012.