

University of Sheffield, Department of Physics: COSHH Assessment

Free radical polymerisation of Vinyl Acetate in IPA using AIBN initiator

Please write legibly; if the assessor of the procedure is a student, this form must be countersigned by the supervisor

Research Group A group	Laboratory room number A Room	Date	Expiry Date (to be filled in by the chemical safety officer)
Experimenter's Name A Name		Supervisor's Name A N Other	
Substances/chemicals to be used (including quantities) Azobisisobutronitrile(AIBN) <50mg, Vinyl Acetate(VA) <150g, IPA <150g		Known hazards AIBN: Explosive; Highly Flammable; Harmful by Inhalation, swallowing; Irritating to eyes, resp system and skin. IPA: Highly Flammable; Irritating to eyes and resp system VA: Highly Flammable; Harmful by Inhalation, contact with skin and swallowing; irritating to eyes; may cause cancer	
Hazard information source Supplier's data sheet CD Rom Other (specify) Oxford MSDS site			
Full description of procedure, experiment or reaction 50mg of recrystallised AIBN to be measured out into a glass vial, 100g of distilled IPA to be weighed out into a beaker, a small aliquot will be used to dissolve the AIBN. To the beaker add 80g of distilled and de-inhibited VA, then add the solution of AIBN and IPA and insure thorough mixing. Transfer the mixture to a glass vacuum ampoule, and degas the mixture using a high vacuum line (freeze-pump-thaw technique). Once the mixture is sufficiently degassed, seal the ampoule under vacuum using a glass torch and place the ampoule in a water bath at 60°C for 24 hours. After the reaction is complete allow the ampoule to cool before opening and pouring the polymer solution into a RBF before evaporating the solvent to collect the polymer.			
Control measures and safety precautions to be followed All chemical manipulations are to be carried out in a fume hood, lab coat, goggles and gloves to be worn, except for when using vac line, when goggles replaced with full face shield. Keep containers tightly closed, keep AIBN in freezer, keep VA in freezer under nitrogen			
Emergency procedures for spillage, uncontrolled release, first aid etc. <u>Skin Contact</u> : wash with lots soap and water consult medic. <u>Inhalation</u> : move to fresh air consult medic. <u>Eye contact</u> : flush eye with water/saline for 15 mins and seek medical advice. <u>Ingestion</u> : Do not induce vomiting, rinse mouth with water if conscious, seek medical advice. Accidental release: do not breathe vapours, avoid causes of ignition, do not flush to drain, mop up and dispose of as non-halogenated waste.			Risk Rating (H/M/L) Medium (significant quantity of possibly carcinogenic vinyl acetate)
Disposal procedure Non halogenated waste bottle for liquids, hazardous solid waste for AIBN			
Name and email address of Assessor:		I HAVE READ AND UNDERSTOOD THIS DOCUMENT Signed and dated (supervisor):	
Status:			
Signed and dated:		Signed and dated (chemical safety officer):	

Note: it is an offence under the COSHH regulations not to have an assessment form when using a hazardous substance