

38B Ethanoic acid: related 'higher' monobasic acids

Propanoic acid		Propionic acid	CH ₃ CH ₂ COOH
Corrosive		R34: Causes burns. Solutions equal to or stronger than 1.3 mol dm ⁻³ should be labelled CORROSIVE. Solutions equal to or stronger than 0.6 mol dm ⁻³ but weaker than 1.3 mol dm ⁻³ should be labelled IRRITANT	
		Flash point: 49 °C. WEL (mg m⁻³): 31 (LTEL), 46 (STEL).	
Disposal: W1, W4, W7 W4 Use a fume cupboard. W7 Dilute to less than 0.1 mol dm ⁻³ .			
Store: CLa			
Butanoic acid		<i>n</i> -butyric acid	CH ₃ (CH ₂) ₂ COOH
Pentanoic acid		<i>n</i> -valeric acid	CH ₃ (CH ₂) ₃ COOH
Hexanoic acid		<i>n</i> -hexoic acid; caproic acid	CH ₃ (CH ₂) ₄ COOH
Corrosive		R34: Causes burns. All have extremely obnoxious odours and bulk use is best avoided in schools.	
		Disposal: W1, W4	
Store: CLa			
Dodecanoic acid		Lauric acid	CH ₃ (CH ₂) ₁₀ COOH
Hexadecanoic acid		Palmitic acid	CH ₃ (CH ₂) ₁₄ COOH
Irritant		R36/37/38: Irritating to eyes, respiratory system and skin.	
		Disposal: W2, W4	
Store: GOrg			
<i>cis</i> -octadec-9-enoic acid; oleic acid; CH ₃ (CH ₂) ₇ CHCH(CH ₂) ₇ COOH Octadecanoic acid; stearic acid; CH ₃ (CH ₂) ₁₆ COOH			Disposal: W4, W8

For emergencies, see *Hazard E* as well as more detailed information which may be on this *Hazard*.

38B Ethanoic acid: related 'higher' monobasic acids Model risk assessments

Activity	User	Control measures	Experimental points
Cooling curves	Y7	Wear eye protection.	Octadecanoic acid is often used. (More information about cooling curves can be found in Guide L195, <i>Safer Chemicals, Safer Reactions.</i>)
General use of propanoic acid	Y9	Wear eye protection.	Solutions less than 1.3 mol dm^{-3} propanoic acid are suitable.
Test-tube preparation of esters	Y9	Wear goggles. Use a fume cupboard to dispense the acids.	Mix 10 drops of acid with 10 drops of the alcohol and add 1 or 2 drops of concentrated sulfuric(VI) acid. After warming in a bath of hot water, cool under the tap before adding the mixture to sodium carbonate solution in a beaker. Pupils should be shown how to smell the ester carefully. See <i>Making Esters</i> guidance leaflet PS67-07.
Use of butanoic, pentanoic and hexanoic acids	TT	Wear goggles or a face shield. Wear chemical-resistant gloves and a laboratory coat. Use a fume cupboard.	These acids have extremely obnoxious odours; they also occur naturally in the breakdown of body oils and give rise to the smell of 'body odour'. If they contaminate clothing, they are difficult to remove and the odour can be detected for a long time afterwards. The bottles should be handled in a fume cupboard and small drops can be dispensed into other containers.

For emergencies, see *Hazard E* as well as more detailed information which may be on this *Hazard*.