1.	Identification of the Substance/Preparation and Company	
1.1	Identification of Substance	**AMMONIUM BICARBONATE FFQ**
	Other Names:	AMMONIUM HYDROGEN CARBONATE
1.2	Use of substance	It is used as a food ingredient (E number E503ii) *and as a chemical intermediate*.
1.3	Company Identification	Brotherton Speciality Products Limited Calder Vale Road Wakefield West Yorkshire, WF1 5PH United Kingdom. Email : info@brotherton.co.uk
1.4	Emergency Telephone:	'Phone (international) : 44 (0) 1924 371919 Fax (international) : [44 (0) 1924 290408]

2.	Composition/Information on Ingredients	
2.1	Composition:	Ammonium Hydrogen Carbonate >99% EC Number 213-911-5; CAS Number 1066-33-7. (E number E503ii) X_n - R22. Basic Magnesium Carbonate (E number E504i/ii): *0.8%* max.
2.2	Formula	NH_4HCO_3

3.	Hazards Identification	
3.1	Health Hazard Summary	The product is classified as dangerous for supply.
3.2	Risk Phrases	Harmful if swallowed.

4.	First-aid Measures	
4.1	In case of eye contact	Immediately irrigate the eye with copious quantities of water. Seek medical attention if irritation persists.
4.2	In case of skin contact	Rinse off with water as soon as possible.
4.3	In case of inhalation	Remove to fresh air. See medical attention if symptoms are evident.
4.4	In case of ingestion	Drink large amounts of water and seek medical attention without delay.
4.5	Further information	Not applicable.

5.	**Fire-fighting Measures**	
5.1	General	The product is not classified as flammable or combustible.
5.2	Fire Extinguishing Media	Water/water spray, carbon dioxide, dry chemical powder, alcohol or polymer foam.
5.3	Unusual and Explosion Hazards	A limited range of ammonia/air (16 - 27% ammonia) mixtures can be ignited with difficulty and explosion may occur.
5.4	Protective Equipment in case of fire	Wear self contained breathing apparatus. See section 10 for hazardous decomposition products.

6.	**Accidental Release Measures**	
6.1	Small Spillages	Rinse away with plenty of water.
6.2	Large Spillages	Collect up for authorised disposal.
6.3	Personal Protective Equipment	A respirator suitable for ammonia gas may be required in case of large spillage. See section 8.

7.	**Handling and Storage**	
7.1	Handling	The usual high standards of industrial hygiene should be maintained. Avoid eye and skin contact. Avoid creating dusts.
7.2	Storage	Containers: Polythene or paper (with polythene inner coating) sacks. Fibre board kegs with polythene liner. Polythene kegs. Location: Store in a cool, dry ventilated place away from direct heat or sunlight. Store in a cool place away from acids, alkalis, nitrates, and nitrites. Conditions: Store at temperatures not exceeding 30°C.
7.3	Shelf life	Nominally up to 6 months. Caking/lump formation may occur after this time. The product does not deteriorate either chemically or biologically after this period.

8.	**Exposure Controls/Personal Protection**	
8.1	*Workplace Exposure Limits (WEL)*	Ammonium bicarbonate - not listed Ref. 1 Magnesium Carbonate – Not listed. Ref. 1 Ammonia gas: Ref. 1 Long-term exposure limit (8 hour TWA reference period): 25 ppm (*18* mg.m^{-3}). Short-term exposure limit (15 minute reference period): 35 ppm (*25* mg.m^{-3}).
8.2	Exposure Controls	Local exhaust ventilation should not be required. Use in a well ventilated area. Ensure that the *WEL* for ammonia is not exceeded (see above).
8.3	Respiratory Protection	Not normally required. A respirator with canister suitable for ammonia gas is required if the WEL is exceeded.
8.4	Hand Protection	Wear PVC coated to other chemical resistant gloves.
8.5	Eye Protection	Wear safety glasses or goggles
8.6	Skin Protection	Overalls should be worn.

9.	**Physical and Chemical Properties**	
9.1	Appearance and Odour	A fine white crystal. Slight ammoniacal odour
9.2	pH	7.6 (10%^{W}/w solution)
9.3	Boiling Point	Not applicable.
9.4	Flash Point	Not applicable
9.5	Autoignition Temperature	Not applicable
9.6	Flammability Limits	Not applicable
9.7	Bulk Density	0.85 g cm^{-3}
9.8	Vapour Pressure	79 mbar (25.4°C); 526 mbar (50°C)
9.9	Density	1.58 g cm^{-3}
9.10	Solubility	18%^{W}/w at 20°C in water (magnesium carbonate is insoluble in water)
9.11	Partition Coefficient	-2.4 (25°C) (Log Pow) n-octanol/water
9.12	Melting Point	Not applicable, decomposes above 50°C.

10. Stability and Reactivity		
10.1	Conditions to avoid	Stable at ambient temperatures in closed containers. Avoid heating. *In the open air it will slowly decompose to ammonia, water and carbon dioxide. The rate of decomposition increases with increasing temperature.*
10.2	Materials to avoid	Incompatible with alkalis - ammonia gas is evolved. Incompatible with acids – carbon dioxide gas is evolved. Incompatible with nitrates and nitrites.
10.3	Hazardous Decomposition Products	Ammonia, carbon dioxide.

11. Toxicological Information		
11.1	General	Oral toxicity: LD50 Oral rat: 1576 mg/kg The product has been manufactured and widely used for many decades with no reports of hazardous or long term effects to humans.

12. Ecological Information		
12.1	Ecotoxicity	Toxicity to fish: Other flow through. Oncorhynchus mykiss (96hr): 102 mg/l Micro-organisms/Effect on activated sludge: DIN 38412 Part 27 (draft) aquatic Pseudomonas putida/EC10 (16hr): 1680 mg/l Assessment of aquatic toxicity: It is not expected that the product is acutely harmful to aquatic organisms.
12.2	Mobility	The product is mainly soluble in water and is expected to migrate in soils.
12.3	Persistence and Biodegradability	The material is biodegradable. Ammonium ions will be converted to nitrate by microbiological action.
12.4	Bioaccumulation Potential	Accumulation in organisms is not predicted based on its Partition Coefficient. See section 9.

13. Disposal Considerations	
13.1 Small Quantities	Wash to the trade effluent, ensuring local water consents are maintained.
13.2 Large Quantities	The material should be sent to a specialised waste contractor for disposal. It is not classified as hazardous waste *but the mobility of ammonium compounds, and potential effect on groundwater, should be taken into consideration when determining the disposal route.*

14. Transport Information	
14.1 General	The material is not classified as dangerous for transport. Not listed. Ref. 4.

15. Regulatory Information	
15.1 General	Not listed. ref. 3 Hazardous component for labelling: Ammonium Bicarbonate (Ammonium Hydrogen Carbonate) Food ingredient regulation labelling: "Restricted use in food, not for sale to end users."
15.2 Hazard symbols	Harmful X_n
15.3 Risk Phrases	R22: Harmful if swallowed.
15.4 Safety Phrases	Not Applicable.
15.5 Relevant Regulations	The product is classed under the Chemicals (Hazard Information and Packaging) Regulations (UK). The safety data contained within this document should be considered when making an assessment under the Control of Substances Hazardous to Health Regulations (COSHH) (UK).

16. Other Information		
16.1	References	1. Workplace Exposure Limits EH40 - Health and Safety Executive. 2. Dangerous Properties of Industrial Materials - N. Irving Sax. 3. Approved Supply List. Information approved for the Classification and Labelling of Dangerous Substances and Preparations for Supply - Health and Safety Commission. 4. European Agreement Concerning the International Carriage of Dangerous Good by Road (ADR) – EC/UN. *5. European Commission Directive – 2001/58/EC.*
16.2	Risk Phrases in section 2.	R22 Harmful if swallowed.
16.3	Important Notes	This document must be read and understood before using the product. The information in this document is given in good faith and is to the best of the Company's knowledge accurate at the time of issue. It is the user's responsibility to be satisfied as to the suitability of the product for any particular application. *Amendments made to this revision are shown in italics.*