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SAFETY DATA SHEET



Air1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Air1
Product code : PA516L
Product type : liquid

1.2 Relevant identified uses of the substance or mixture and uses advised against

Notes : The safety data sheet and any attached exposure scenario are compiled in accordance with the REACH regulation and in no way reflects the specification, purity or quality standards required for specific applications and use of the product identified in section 1.1.

Identified uses

Industrial distribution.
Industrial Use for flue gas NOx and SOx reduction.
Industrial USE as a laboratory/research chemical.
Professional USE as reactive agent/processing aid and for general chemical applications.
Professional USE as a laboratory/research chemical.
Consumer USE as part of specialist products.

Uses advised against : None identified.

1.3 Details of the supplier of the safety data sheet

Yara Industrial

Address

Street : Harvest House, Europarc
Postal code : DN37 9TZ
City : Grimsby, North East Lincolnshire
Country : United Kingdom
Telephone number : +44 (0) 1472 889250
Fax no. : +44 (0) 1472 889251
e-mail address of person responsible for this SDS : yarauk.hesq@yara.com

1.4 Emergency telephone number

National advisory body/Poison Center : Not available.

Supplier

Telephone number : National Chemical Emergency Centre
+44 (0) 1865 407333

Hours of operation : 24h

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification : Not classified.

Classification according to Directive 1999/45/EC [DPD]

Classification : Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Precautionary statements

Supplemental label elements : Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification : None.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Avoid inhalation of vapor, spray or mist. If inhaled, remove to fresh air. Get medical attention if you feel unwell.
- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None identified.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
ammonia
Avoid breathing dusts, vapors or fumes from burning materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : None.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- Recommendations** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Bund storage facilities to prevent soil and water pollution in the event of spillage.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

- Recommended monitoring procedures** :
- If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
 - Reference should be made to monitoring standards, such as the following:
 - European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
 - European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)
 - European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)
 - Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

- Appropriate engineering controls** :
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

- Hygiene measures** :
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. A washing facility or water for eye and skin cleaning purposes should be present.

- Eye/face protection** :
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

- Hand protection** :
- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
 - > 8 hours (breakthrough time): Protective gloves should be worn under normal conditions of use.

- Body protection** :
- Personal protective equipment for the body should be

- selected based on the task being performed and the risks involved.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : In case of inadequate ventilation wear respiratory protection. Recommended: Filter P2 (EN 143)
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : liquid
- Color** : Colorless.
- Odor** : slight, ammoniacal
- Odor threshold** : Not determined.
- pH** : 9 - 10
- Melting point/freezing point** : -11.5 °C
- Initial boiling point and boiling range** : 100 °C
- Flash point** : Not applicable
- Evaporation rate** : Not determined
- Flammability (solid, gas)** : Non-flammable.
- Burning time** : Not determined
- Burning rate** : Not determined
- Upper/lower flammability or explosive limits** : **Lower:** Not determined
Upper: Not determined
- Vapor pressure** : Not determined
- Vapor density** : Not determined
- Relative density** : Not determined
- Bulk density** : Not determined
- Density** : 1.09 g/cm³
- Water solubility** : > 100 g/l
- Partition coefficient: n-octanol/water** : Not determined
- Auto-ignition temperature** : Not determined
- Viscosity** : **Dynamic:** 1.4 mPa.s @ 20 °C
- Kinematic:** Not determined
- Explosive properties** : None.
- Oxidizing properties** : None.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid contamination by any source including metals, dust and organic materials.
- 10.5 Incompatible materials** : Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.
- Remark** : Reactive or incompatible with the following materials:
Oxidizing agents
acids
alkalis
Nitrites and nitrates
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

- Skin** : No known significant effects or critical hazards.
Eyes : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

- Skin** : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Information on the likely routes of exposure : No known significant effects or critical hazards.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Toxicokinetics

Absorption : Rapidly absorbed.

Distribution :

Not metabolized within liver tissues before entering the systemic circulation.

- Metabolism** : Metabolite is not known to be toxic.
- Elimination** : The chemical and its metabolites are fully excreted and do not accumulate within the body.

SECTION 12: Ecological information

12.1 Toxicity

- Conclusion/Summary** : No known significant effects or critical hazards.

12.2 Persistence and degradability

- Conclusion/Summary** : No known significant effects or critical hazards.

12.3 Bioaccumulative potential

- Conclusion/Summary** : No known significant effects or critical hazards.

12.4 Mobility in soil

- Soil/water partition coefficient (KOC)** : Not available.
- Mobility** : This product may move with surface or groundwater flows because its water solubility is: high

12.5 Results of PBT and vPvB assessment

- PBT** : Not applicable.
- vPvB** : Not applicable.

- 12.6 Other adverse effects** : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
06 10 99	wastes not otherwise specified

Packaging

- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information**Regulation: ADR/RID**

14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	: ADR/RID

Regulation: ADN

14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	: ADN
<u>Marine pollutant</u>	: No.

Regulation: IMDG

14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	: IMDG

Regulation: IATA

14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	: IATA

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Proper shipping name : Urea solution
Ship type : 3
Pollution category : Z

14.8 IMSBC : Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization Substances of very high concern

Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso II Directive

This product is not controlled under the Seveso II Directive.

National regulations

Notes : To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- DMEL = Derived Minimal Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- PBT = Persistent, Bioaccumulative and Toxic
- vPvB = Very Persistent and Very Bioaccumulative
- bw = Body weight

Key literature references and sources for data :

- EU REACH IUCLID5 CSR.
- National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.
- IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada. Regulation (EC) No 1272/2008 Annex VI.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	Calculation method

Full text of abbreviated H statements	:	Not applicable.
Full text of classifications [CLP/GHS]	:	Not applicable.
Full text of abbreviated R phrases	:	Not applicable.
Full text of classifications [DSD/DPD]	:	Not applicable.
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Version	:	1.1
Prepared by	:	Yara Product Classifications & Regulations.

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.