SAFETY DATA SHEET

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

<table>
<thead>
<tr>
<th>1.1. Product identifier</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>CleanAirBlue® AdBlue®</td>
</tr>
<tr>
<td>Product number</td>
<td>4303</td>
</tr>
<tr>
<td>Synonyms; trade names</td>
<td>AdBlue®/ Urea Solution/DEF/ARLA 32</td>
</tr>
<tr>
<td>CAS number</td>
<td>57-13-6</td>
</tr>
<tr>
<td>EC number</td>
<td>200-315-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2. Relevant identified uses of the substance or mixture and uses advised against</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identified uses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3. Details of the supplier of the safety data sheet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier</td>
<td>Samuel Banner &amp; Co Ltd</td>
</tr>
<tr>
<td></td>
<td>2M House</td>
</tr>
<tr>
<td></td>
<td>Sutton Quays Business Park</td>
</tr>
<tr>
<td></td>
<td>Clifton Road</td>
</tr>
<tr>
<td></td>
<td>Sutton Weaver</td>
</tr>
<tr>
<td></td>
<td>RUNCORN</td>
</tr>
<tr>
<td></td>
<td>WA7 3EH, UK</td>
</tr>
<tr>
<td></td>
<td>+44 (0)1928 597 000 (General Enquiries)</td>
</tr>
<tr>
<td></td>
<td>+44 (0)1928 240 801 (Fax)</td>
</tr>
<tr>
<td>Contact person</td>
<td><a href="mailto:sdsadmin@bannerchemicals.com">sdsadmin@bannerchemicals.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.4. Emergency telephone number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone</td>
<td>0870 190 6777 (National Chemical Emergency Centre) +44 (0)1270 502891</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

<table>
<thead>
<tr>
<th>2.1. Classification of the substance or mixture</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Classification (EC 1272/2008)</td>
<td></td>
</tr>
<tr>
<td>Physical hazards</td>
<td>Not Classified</td>
</tr>
<tr>
<td>Health hazards</td>
<td>Not Classified</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Not Classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2. Label elements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EC number</td>
<td>200-315-5</td>
</tr>
<tr>
<td>Hazard statements</td>
<td>NC Not Classified</td>
</tr>
<tr>
<td>Precautionary statements</td>
<td>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
</tbody>
</table>

SECTION 3: Composition/information on ingredients
3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>urea</td>
<td>30-60%</td>
</tr>
</tbody>
</table>

CAS number: 57-13-6  EC number: 200-315-5

Classification
Not Classified

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments  Contains water and preservative

SECTION 4: First aid measures

4.1. Description of first aid measures

**Inhalation**
Remove affected person from source of contamination. Get medical attention if any discomfort continues.

**Ingestion**
Do not induce vomiting. Get medical attention if any discomfort continues.

**Skin contact**
Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation persists after washing.

**Eye contact**
Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

**General information**
No additional symptoms or effects are anticipated.

4.3. Indication of any immediate medical attention and special treatment needed

**Notes for the doctor**
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

**Suitable extinguishing media**
Use foam, carbon dioxide, dry powder or water fog to extinguish.

5.2. Special hazards arising from the substance or mixture

**Specific hazards**
In case of fire, toxic gases may be formed.

**Hazardous combustion products**
Does not decompose when used and stored as recommended.

5.3. Advice for firefighters

**Protective actions during firefighting**
Use water spray to reduce vapours.

**Special protective equipment for firefighters**
Use air-supplied respirator, gloves and protective goggles.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions**
Provide adequate ventilation.

6.2. Environmental precautions

**Environmental precautions**
Contain spillage with sand, earth or other suitable non-combustible material. Avoid discharge into drains or watercourses or onto the ground.
6.3. Methods and material for containment and cleaning up

Methods for cleaning up  Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water.

6.4. Reference to other sections

Reference to other sections  For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions  Avoid contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions  Store at moderate temperatures in dry, well ventilated area. Store in closed original container at temperatures between 0°C and 30°C. Do not use containers made of the following materials: Copper and its alloys. Galvanised containers.

7.3. Specific end use(s)

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

urea

Long-term exposure limit (8-hour TWA): WEL No std.
Short-term exposure limit (15-minute): WEL No std.
WEL = Workplace Exposure Limit

Ingredient comments  No exposure limits known for ingredient(s).

DNEL  No DNEL information available.

PNEC  No PNEC information available.

8.2. Exposure controls

Protective equipment

Appropriate engineering controls  Provide adequate ventilation.

Eye/face protection  Wear tight-fitting, chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection  Wear protective gloves. Wear protective gloves made of the following material: Polyvinyl chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection  Wear suitable protective clothing as protection against splashing or contamination.

Hygiene measures  Provide eyewash station. Wash at the end of each work shift and before eating, smoking and using the toilet.

Respiratory protection  If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Appearance  Clear liquid.
Colour  Colourless.
Odour  Slight.
PH  pH (concentrated solution): 10
Initial boiling point and range  103°C
Relative density  1.09 @ 20°C
Solubility(ies)  Miscible with water.
Viscosity  1.4 mPa s @ 25°C

9.2. Other information

Refractive index  1.3814 - 1.3843

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity  There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability  Stable at normal ambient temperatures and when used as recommended. Product freezes at -11°C. Product starts to hydrolyse at 30°C.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions  None under normal processing.

10.4. Conditions to avoid

Conditions to avoid  Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid  Strong oxidising agents. Nitrites Acids. Alkalis. Calcium hypochlorite. Sodium hypochlorite. Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.

10.6. Hazardous decomposition products

Hazardous decomposition products  Ammonia

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Inhalation  Remove from contaminated area. Lay patient down. Keep warm and rested.

Ingestion  Although ingestion is not thought to be harmful, the material may lead to discomforting effects by inducing gastrointestinal tract pain leading to nausea and vomiting. In an occupational setting, ingestion of insignificant quantities should not be a cause for concern.

Skin contact  Product can produce inflammation of the skin following prolonged contact or immersion. Skin contact is not thought to have harmful health effects, the material may still produce adverse effects following entry through wounds, lesions or abrasions, where a stinging sensation will be felt.
Eye contact

Although the material is not classed as an irritant, direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish

$LC_{90}$, 96 hours: >6810 mg/l, Fish

12.2. Persistence and degradability

Persistence and degradability

The product is biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

12.4. Mobility in soil

Mobility

No information available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods

Recycle containers wherever possible. This product is not classified as hazardous waste.

SECTION 14: Transport information

General

The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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

Not applicable.

SECTION 15: Regulatory information

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

National regulations

EU legislation
Regulation (EC) No 1272/2008 CLP.
Regulation (EC) No 1907/2006 REACH.

Guidance
Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

General information
Only trained personnel should use this material. Since empty containers retain product residue, follow label warnings, even after container is emptied. For further Health and Safety information contact: Health and Safety Officer. Labels should not be removed from containers until they have been cleaned and no product remains within.

Revision comments
Updated company address.

Issued by
Compliance Department

Revision date
16/10/2018

Revision
10

Supersedes date
19/04/2018

SDS status
Approved.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy themselves as to the suitability of such information for his own particular use.

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