SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

SDS # : 35161

ADBLUE

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier
Product name: ADBLUE
Number: 8LN
Substance/mixture: Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Reducing agent for nitrogen oxides emitted from diesel engine-powered vehicles.

1.3. Details of the supplier of the safety data sheet
Supplier: TOTAL LUBRIFIANTS
562 Avenue du Parc de L'Ile
92029 Nanterre Cedex
Tél: +33 (0)1 41 35 40 00
Fax: +33 (0)1 41 35 84 71

For further information, please contact:
Contact Point: HSE
E-mail Address: rm.msds-lubs@total.com

1.4. Emergency telephone number
+33 1 49 00 00 49 (24h/24, 7d/7)
France - ORFILA (INRS) Tél : +33 (0)1 45 42 59 59
In France : - PARIS : Hôpital Fernand Widal 200, rue du Faubourg Saint-Denis 75475 Paris Cédex 10 , Tel : 01.40.05.48.48.
- MARSEILLE : Hopital Salvador, 249 bd Ste Marguerite 13274 Marseille cedex 5, Tel : 04.91.75.25.25.
- LYON : Hopital Edouard Herriot, 5 place d'Arsonvol, 69437 Lyon cedex 3, Tel : 04.72.11.69.11.
- NANCY : Hopital central, 29 Av du Mal De Lattre de Tassigny, 54000 Nancy, Tel : 03.83.32.36.36 ou le SAMU : Tel (15)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
REGULATION (EC) No 1272/2008
***
For the full text of the H-Statements mentioned in this Section, see Section 2.2.
***

Classification
The product is not classified as dangerous according to Regulation (EC) No. 1272/2008

DIRECTIVE 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16
SDS # : 35161

ADBLUE

Revision Date: 2015-01-29

The substance/mixture is non-dangerous in accordance with Directive(s) 67/548/EEC with amendments and/or 1999/45/EC with amendments

Symbol(s)

Not classified

2.2. Label elements

Labelled according to

REGULATION (EC) No 1272/2008***

Hazard Statements

none

Precautionary Statements

none

2.3. Other hazards

Physical-Chemical Properties

Contaminated surfaces will be extremely slippery.

Environmental properties

Should not be released into the environment.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixture

Chemical nature

Aqueous solution.

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4: FIRST AID MEASURES

4.1. Description of first-aid measures

General advice

IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Eye contact

Rinse thoroughly with plenty of water, also under the eyelids.

Skin contact

Remove contaminated clothing and shoes. Wash off with soap and water. Wash contaminated clothing before reuse.

Inhalation

Move to fresh air.

Ingestion

Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician.
4.2. Most important symptoms and effects, both acute and delayed

Eye contact: Not classified.
Skin contact: Not classified.
Inhalation: Not classified.
Ingestion: Not classified.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media: Water spray or fog, Carbon dioxide (CO₂), Foam, ABC powder.
Unsuitable Extinguishing Media: Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special Hazard: Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide, Nitrogen oxides (NOₓ), Ammonia.

5.3. Advice for fire-fighters

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit.
Other information: Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General Information: Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery.

6.2. Environmental precautions

General Information: Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. Try to prevent the material from entering drains or water courses.

6.3. Methods and materials for containment and cleaning up
Methods for cleaning up

Dam up. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Personal Protective Equipment
See Section 8 for more detail.

Waste treatment
See section 13.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

When using, do not eat, drink or smoke. For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Prevention of fire and explosion

Take precautionary measures against static discharges. Ground/bond containers, tanks and transfer/receiving equipment.

Hygiene measures

Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep away from food, drink and animal feedingstuffs. Keep in a bunded area. Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Do not remove the hazard labels of the containers (even if they are empty). Keep at temperatures between -5 and 30 °C. Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Protect from frost, heat and sunlight. Protect from moisture.

Materials to Avoid

Strong oxidizing agents. Nitrates.

Packaging material

Polyethylene, Stainless steel.

7.3. Specific end uses

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

Do not contain substance with European workplace exposure limits in concentration above regulatory thresholds
8.2. Exposure controls

Occupational Exposure Controls

Engineering Measures
Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal Protective Equipment

General Information
If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

Respiratory protection
None under normal use conditions. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Respirator with combination filter for vapour/particulate (EN 14387). The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Eye Protection
If splashes are likely to occur, wear: Safety glasses with side-shields.

Skin and body protection
Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing.

Hand Protection
Hydrocarbon-proof gloves: Fluorinated rubber, Nitrile rubber. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves.

Environmental exposure controls

General Information
The product should not be allowed to enter drains, water courses or the soil.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colorless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical State @20°C</td>
<td>liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Slight, Ammoniacal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>9 - 10</td>
<td></td>
<td>DIN ISO 976</td>
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<tr>
<td>Boiling point/boiling range</td>
<td>&gt;= 80 °C</td>
<td>@ 1.013 bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;= 176 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
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<td>Not applicable</td>
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</tbody>
</table>
9.2. Other information

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

10.2. Chemical stability

Stability Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous Reactions None under normal processing.

10.4. Conditions to Avoid

Conditions to Avoid Heat (temperatures above flash point), sparks, ignition points, flames, static electricity.

10.5. Incompatible Materials

Materials to Avoid Strong oxidizing agents. Nitrates.

10.6. Hazardous Decomposition Products

Hazardous Decomposition Products Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot, Nitrogen oxides (NOx), Ammonia (NH3).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity Local effects Product Information
SDS #: 35161

ADBLUE

Revision Date: 2015-01-29  
Version 2.01

<table>
<thead>
<tr>
<th>Form of exposure</th>
<th>Method</th>
<th>Species</th>
<th>Property</th>
<th>Values</th>
<th>Unit</th>
<th>Duration</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Oral</td>
<td></td>
<td>rat</td>
<td></td>
<td>14300</td>
<td>mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin contact . Not classified.
Eye contact . Not classified.
Inhalation . Not classified.
Ingestion . Not classified.

Acute toxicity - Component Information

Sensitization

Sensitization Not classified as a sensitizer.

Specific effects

Carcinogenicity This product is not classified carcinogenic.
Mutagenicity This product is not classified as mutagenic.
Reproductive toxicity This product does not present any known or suspected reproductive hazards.

Repeated Dose Toxicity

Subchronic toxicity No information available.

Target Organ Effects (STOT)

Target Organ Effects (STOT) No information available.

Other information

Other adverse effects Characteristic skin lesions (pimples) may develop following prolonged and repeated exposures (contact with contaminated clothing).

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Not classified.

Acute aquatic toxicity - Product Information

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Method</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Values</th>
<th>Unit</th>
<th>Exposure Time</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>Leuciscus idus</td>
<td>LC50</td>
<td>&gt;6810</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
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<td>LC50</td>
<td>&gt;10000</td>
<td>mg/l</td>
<td>48h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Acute aquatic toxicity - Component Information
No information available.

Chronic aquatic toxicity - Product Information
No information available.

Chronic aquatic toxicity - Component Information
No information available.

Effects on terrestrial organisms
No information available.

12.2. Persistence and degradability

General Information
Readily biodegradable.

12.3. Bioaccumulative potential

Product Information
Bioaccumulation is unlikely.

LogPow
Component Information
No information available

12.4. Mobility in soil

Soil
Given its physical and chemical characteristics, the product is generally mobile in the ground.

Air
Loss by evaporation is limited.

Water
Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB). This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6. Other adverse effects

General Information
No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues / Unused Products
Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

EWC Waste Disposal No.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

ADR/RID
Not regulated

IMDG/IMO
Not regulated

ICAO/IATA
Not regulated

ADN
Not regulated

Section 15: REGULATORY INFORMATION

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

European Union

International Inventories
No information available

Further information

15.2. Chemical Safety Assessment

Chemical Safety Assessment
No information available

Section 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
Not applicable

Abbreviations, acronyms
SDS # : 35161

ADBLUE

Revision Date: 2015-01-29

Legend  Section 8
TWA: Time Weight Average
STEL: Short Time Exposure Limit

+ Sensitizer
** Hazard Designation
M: Mutagen

Skin designation

C: Carcinogen
R: Toxic to reproduction

Revision Date: 2015-01-29
Revision Note *** Indicates updated section.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user’s responsibility to ensure that he is subject to no other obligations than those mentioned.

End of the safety data sheet