

NOVAX Material & Technology
Safety Data Sheet (SDS)




Safety Data Sheet (SDS)

I 、 Chemical Product and Company Identification

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| Product Name : AUS32 、 AdBlue Solution 、 DEF 、 ARLA32 、 Urea Solution |
| Other Name : AUS32 、 AdBlue 、 DEF 、 ARLA32 solution |
| Product Use : Used according to manufacturer's directions. Used for NOx reduction in exhaust gases from vehicles with SCR diesel engines. |
| Manufacturer/Supplier : NOVAX Material & Technology Inc. No. 198-238, Sec. 2, Zhong'ai Rd., Guanyin Dist., Taoyuan City 328452, Taiwan (R.O.C.) TEL: +886-3-3115988 FAX: +886-3-3115288 E-mail: yang@novax-material.com |
| Emergency Tel. Number: 0800-200669 /+886-3-311-5988 |

II 、 Hazards Identification

| Hazard Class : Toxic Substances CLASS 4 (Skin, Ingestion) ; Corrosion /Skin Irritation Substance CLASS 2 ; Serious Injury / Eye Irritation Substance CLASS 2B ; Skin Allergies CLASS 1 。 | | | | | | | | | | | | | | | | | | | | | |
|---|------|--|--------|---|---------|---|----------|---|--------|---|---------|---|--|--------|---|------|---|------------|---|---------------------|--|
| <table border="1"> <thead> <tr> <th colspan="2">NFPA</th> </tr> </thead> <tbody> <tr> <td>Severe</td> <td>4</td> </tr> <tr> <td>Serious</td> <td>3</td> </tr> <tr> <td>Moderate</td> <td>2</td> </tr> <tr> <td>Slight</td> <td>1</td> </tr> <tr> <td>Minimal</td> <td>0</td> </tr> </tbody> </table> | NFPA | | Severe | 4 | Serious | 3 | Moderate | 2 | Slight | 1 | Minimal | 0 | <table border="1"> <tbody> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Fire</td> <td>0</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td></td> </tr> </tbody> </table> | Health | 1 | Fire | 0 | Reactivity | 0 | Personal Protection | |
| NFPA | | | | | | | | | | | | | | | | | | | | | |
| Severe | 4 | | | | | | | | | | | | | | | | | | | | |
| Serious | 3 | | | | | | | | | | | | | | | | | | | | |
| Moderate | 2 | | | | | | | | | | | | | | | | | | | | |
| Slight | 1 | | | | | | | | | | | | | | | | | | | | |
| Minimal | 0 | | | | | | | | | | | | | | | | | | | | |
| Health | 1 | | | | | | | | | | | | | | | | | | | | |
| Fire | 0 | | | | | | | | | | | | | | | | | | | | |
| Reactivity | 0 | | | | | | | | | | | | | | | | | | | | |
| Personal Protection | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | |
| Content of Symbols : | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> ● Signs & Symptoms : ● Signal Words : Warning ● Hazard Statements : <ol style="list-style-type: none"> 1. Harmful if ingested 2. Harmful if Skin contacted 3. Skin irritation is incurred 4. Eye irritation is incurred ● Precautionary Statements : <ol style="list-style-type: none"> 1. Keep away from flammable materials-firework are strictly forbade. 2. Put containers in appropriate place along with adequate ventilation. 3. Set up electricity preventing methods as operating. | | | | | | | | | | | | | | | | | | | | | |
| Other Hazards : -- | | | | | | | | | | | | | | | | | | | | | |

III 、 Composition, Information on Ingredient Substance

| Ingredient | CAS Number | EC Number | % |
|------------|------------|-----------|-------|
| Urea | 57-13-6 | 200-315-5 | 32.5% |
| Water | 7732-18-5 | 231-791-2 | 67.5% |

IV ․ First Aid Measures

Emergency Procedures :

- Inhalation :

Remove personnel from exposure area to fresh air immediately. If breathing ceases, use bag-valve resuscitator or similar device to perform artificial respiration. Keep warm and at rest. Get medical attention immediately.

- Skin Contact :

Wash if need. If frostbite, freezing, or cryogenic burns occur, warm affected area in warm water. If this is not available, gently wrap affected parts in blankets. Allow circulation to return naturally. Get medical attention immediately.

- Eye Contact :

Wash with large amounts of water or normal saline until no evidence of chemical remains (at least 15~20 minutes). Get medical attention immediately.

- Ingestion :

It is unlikely that emergency treatment will be required. Get medical attention, if need.

V ․ First Fighting Measures

- Suitable Extinguishing Media :

In case of fire, use water spray (fog), foam, dry chemical or CO₂.

- Specific Hazards :

1. Non-flammable by decomposition product of carbon dioxide (CO₂), carbon monoxide (CO), nitrogen oxides (NO_x), ammonia (NH₃).
2. Ambient fire might occur hazard steam, and probably related Nitrogen Oxides is incurred once on fire.

- Specific Fire Fighting Procedure :

1. Move container away from fire area if it can be done without risk.
2. Cool containers with water spray until well after the fire is out.
3. Keep unnecessary people away, isolate hazard area and deny entry.

- Specific Fire Fighting Equipment :

1. Fire fighters should thermal protective clothing and self-contained breathing apparatus.
2. Fire fighters should not access airtight spaces without wearing self-contained breathing apparatus and thermal protective clothing.

VI - Accidental Release Measures

- Personal Precautions :
 1. Avoid heat, flames, sparks and other sources of ignition.
 2. Don't touch spilled material.
 3. Stay at downwind, and keep away from low-lying area.
- Environmental Precautions :
 1. Keep away from headwaters or sewer.
 2. Eliminate all open flame in vicinity of spill or released vapor.
 3. Keep unnecessary people away, isolate hazard area and deny entry.
 4. Ventilate closed spaces before entering.
- Methods for Cleaning up :
 1. Take out material after dry or scrap.
 2. Clean up effected area by running water.

VII - Handling and Storage :

- Handling :

Wear suitable protective equipment.

When using the product do not eat, drink or smoke.

Use according to industrial hygiene rules.

Make sure operation is under ventilate environment.
- Storage :

Use according to industrial hygiene regulations.

Store in a closed container away from incompatible.

Keep drying and container closing.

Check remarkable label onto container.

Avoid physical damage and spill of container.

Suggest storage temperature is 25°C.

VIII - Exposure Controls and Personal Protection :

- Engineering Control :

Ensure adequate ventilation, especially in confined areas. Use only under good ventilation conditions or with respiratory protection.
- Control Parameter :

| TWA | STEL | CEILING | BEIS |
|-----------------|-----------------|-----------------|-----------------|
| Not established | Not established | Not established | Not established |

Safety Data Sheet (SDS)

- Personal Protection Equipment :
 1. Eye : Wear safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
 2. Hand : Impervious gloves. Wash hands before breaks and immediately after handling the product.
 3. Skin and Body : Protecting clothing.
 4. Respiratory : At high concentration, any supplied-air respirator with a sanitary mask even full face piece is required. Notice on warning matter while using.
 5. General hygiene considerations : Avoid breathing vapors. Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink.

IX 、 Physical and Chemical Properties

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|---|----------------|--|----------------|
| Physical State and Appearance : | liquid | Odor : | slight ammonia |
| Odor Threshold Value : | -- | Melting Point : | 100°C |
| pH Value : | 8~10 | Boiling Point/Boiling Range : | -- |
| Flammability Classification (Solid 、 Gas) : | -- | Flash Point : | -- |
| Decomposition Temperature : | -- | Test Method : | closed cup |
| Auto-ignition Temperature : | -- | Flammable Limits : | -- |
| Vapor Pressure (20°C) : | <0.1hPa | Vapor Density : | -- |
| Density (20°C) : | 1.08~1.12g/cm3 | Solubility (water) : | -- |
| Octanol/H2O Coeff. (log Kow) : | -- | Evaporation Rate (N-Butyl Acetate=1) : | -- |

X 、 Stability and Reactivity

- Stability : Stable under recommended storage conditions.
- Possible Hazardous Reactions : --
- Conditions to Avoid : Don't mix with any other chemical or product.
- Materials to Avoid : Acids, Oxidizers, Alkalis.
- Hazardous Decomposition Products : Ammonia gas may be released at high temperatures. Burring of the product releases CO, CO₂, NO_x.

XI 、 Toxicological Information

- Routes of Exposure : Skin, eye, inhalation, ingestion
- Main Symptoms : As statement below.
- Acute Toxicity :
 1. Inhalation : Not available.
 2. Skin Contact : May cause irritation.
 3. Eye Contact : May cause irritation.
 4. Ingestion : May cause stomach distress, nausea or vomiting.

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| <ul style="list-style-type: none"> ● Chronic Toxicity : <ol style="list-style-type: none"> 1. Inhalation : No data available. 2. Skin Contact : Repetitive contact will induce the similar symptom of acute toxicity. 3. Eye Contact : Repetitive contact will induce the similar symptom of acute toxicity. 4. Ingestion : No data available. ● Toxicity Information : <ol style="list-style-type: none"> 1. LD₅₀ (Rats, Skin) : 8200 mg/kg oral dose of rates 2. LD₅₀ (Rats, Ingestion) : 8471 mg/kg oral dose of rates |
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XII 、 Ecological Information

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| <ul style="list-style-type: none"> ● Eco-toxicity : Components of this product have been identified as having potential environment concerns. <ol style="list-style-type: none"> 1. Fish toxicity : L.idus, LC50 : > 6810 mg/L /96h 2. Daphnia toxicity : Daphnia magna, EC50 : > 10000 mg/L /24 3. Toxic algae : Sc.quadricauda IC5 : > 100000 mg/L / 1 / 7d 4. Bacterial toxicity : Ps.putida EC50 : > 100000 mg/L / 16h ● Persistence/Degradability : Not available. ● Bio-accumulate/Accumulation : Not available. ● Mobility in Soil : Not available. ● Other Harmful Effects : Not available. |
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XIII 、 Disposal Considerations

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| <ul style="list-style-type: none"> ● Method of disposal : Empty containers or liners may retain some product residues. Do not empty into drains ; dispose of this material and its container in a safe way. Dispose of in accordance with all applicable local national regulations. ● Hazardous waste : Disposal according to local regulations. |
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XIV 、 Transport Information

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| UN/NA : -- |
| Shipping Name : -- |
| Hazard Class : -- |
| Required Label(s) : -- |
| Packing Group : -- |
| Pollution of Sea (yes/no) : No |

Specific Shipping Requirements :

1. Transport state : Liquid
2. Storage Temperature : Room temperature
3. Pipeline Material : Bag, barrel, tank, tanker, truck, train, bulk carrier.
4. Packing Requirement : Sealed package to avoid concentration deduction caused by moisture absorption.

XV · Regulation Information

Suitable Regulations of R.O.C :

1. Occupational Safety and Health Act
2. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace
3. Labor Safety and Health Act
4. Regulation of Labeling and Hazard Communication of Dangerous and Harmful Materials
5. Act Governing the Punishment of Violation of Road Traffic Regulations
6. Toxicity Chemical Indication and Safety Data Sheets Management
7. Criteria Governing Methods of and Facilities for Storage, Clearance and Disposal of Industrial Wastes

XVI · Other Information

Reference Literatures :

1. Council of Labor Affairs Material Safety Data Sheets
2. ITRI (industrial technology research institute) Industry Safety and Health Technology Center
3. Database of Science Lab.com, U.S.A

Made By : NOVAX Material & Technology Inc.

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Creation Date : 2026.03.19

Remark : Foregoing statement including symbol "—" means: No data at present.

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