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AUS 40

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/EMPLOYER

Product Name: Aqueous Urea Solution (AUS) 40
Supplier: AMON KİMYA VE MAKİNA SAN. TİC. LTD. ŞTİ

Supplier Address Center : Çay Mah. 5 Temmuz Cad. No: 9 K:4 D: 20 İskenderun/Hatay

Use: Aqueous Urea Solution (AUS) 40 is a Marine Grade Urea Solution for marine applications where Selective Catalytic Reduction (SCR) is used to meet emissions requirements .

2. IDENTIFICATION OF HARMFULNESS

Classification (TC 28848)

Physical and chemical hazards: Not classified as harmful under SEA.

Human health hazard: Not classified as harmful under SEA.

Environmental hazard: Not classified as hazardous under SEA.

3.INFORMATION ABOUT ITS COMPOSITION CONTENT

CAS NO	EC NO	CHEMICAL NAME	% BY MASS	HAZARDS CLASSIFICATION
57-13-6	200-315-5	UREA	39.0 - 41.0	THERE IS NO HAZARDOUS CLASS.
7732-18-5	231-791-2	WATER	61.0-59.0	THERE IS NO HAZARDOUS CLASS.

4. FIRST AID MEASURES

In case of contact with eyes: Rinse with plenty of water for 15 minutes. Consult an ophthalmologist.

Inhalation: Remove to fresh air. If symptoms persist, consult a physician.
Ingestion: Rinse mouth with plenty of water and drink plenty of water. If symptoms persist, consult a physician.

Skin Contact: Contaminated clothing should be removed. Skin should be washed immediately with soap and water. If any discomfort persists, consult a physician **.**

KEEP OUT OF REACH OF CHILDREN!

5. FIRE FIGHTING MEASURES

This product is not flammable, combustible or explosive. When exposed to fire, it can be extinguished with water. Foam, dry powder and similar fire extinguishing equipment can be used.

Damages caused by product combustion: Urea may release ammonia due to storage conditions. Caution should be exercised due to the formation of toxic gases.

Special hazards: Cool and ventilate the area exposed to fire.

RECOMMENDATIONS FOR FIRE FIGHTERS: Use special protective equipment such as boots, overalls, gloves, eye and face protection and respiratory equipment.

6.ACCIDENTAL RELEASE MEASURES

ENVIRONMENTAL PROTECTION MEASURES: Do not dispose of in sewers, soil or waterways.
SPILL CLEAN-UP METHODS : Isolate and reduce spillage as much as possible, close drains, absorb spilled product with vermiculite , dry sand or soil and collect in boxes. Collect spilled product by pumping it into a relief tank; it can be used as fertilizer. Flush and clean the area with water.

7. USE AND STORAGE

7.1 Precautions for Safe Handling

Wear appropriate personal protective equipment (see Section 8).

Eating, drinking and smoking in areas where materials are transported, stored and processed should be banned .

Wash hands thoroughly after use. Remove contaminated food before entering food areas. your clothing and protective equipment.

7.2 Conditions for Safe Storage Including Disputes

Store in accordance with local regulations. Store in a cool, dry place, away from direct sunlight. well-ventilated area, away from food and drink

Store in unlabeled containers. Avoid prolonged exposure to high temperatures.

Do not store . Avoid contamination of the environment.

7.3 Specific End Uses

The identified uses for this product are detailed in Section 1.2.

Recommended materials for use with AUS 40

Austenitic chromium-nickel (Cr -Ni) and chromium-nickel-molybdenum (Cr -Ni - Mo) steels: For example, UNS S30400, S30403, S31600, S31603, S31625 and S32100
Titanium
Ni - Mo -Cr-W superalloys, Hastelloy C-276 (UNS N10276)
Polyethylene (PE) does not contain additives that damage SKI systems.
Polypropylene (PP) does not contain additives that damage SKI systems.
Polyisobutylene (PIB) does not contain additives that damage SKI systems.
Perfluoroalkoxy alkane (PFA) does not contain additives that damage SKI systems.
Polyfluoroethylene (PFE) does not contain additives that damage SKI systems.
Polyvinylidenefluoride (PVDF) does not contain additives that damage SKI systems.
Polytetrafluoroethylene (PTFE) does not contain additives that damage SKI systems.
Vinylidene fluoride and hexafluoropropylene copolymers (PVDF-HFP) are free of additives that damage SKI systems.

Materials not recommended for use with AUS 40

Materials that react with ammonia to form compounds that adversely affect selective catalytic reduction (SCR) systems: Carbon steels, zinc-coated carbon steels, soft irons
Non-ferrous metals and metal alloys: Copper, copper alloys, zinc, lead
Solders containing lead, silver, zinc and copper

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Aluminium and aluminium alloys
Magnesium and magnesium alloys
Plastics or metals coated with nickel

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT



TECHNICAL MEASURES : Ensure adequate ventilation. Observe Occupational Exposure Limits and reduce the risk of inhaling vapours .

RESPIRATORY EQUIPMENT : Wear a respiratory mask compatible with CO, CO2, NH3 and NOx gases .

HAND PROTECTION : Use protective nitrile gloves to prevent hand contact as the product is basic .
EYE PROTECTION : Wear safety glasses or a face shield if there is a risk of splashing.

HYGIENE MEASURES DO NOT SMOKE IN WORK PLACES! Wash hands at every shift change and before eating, smoking and going to the toilet. Do not eat or drink anything during use and do not smoke. **SKIN PROTECTION** Protective clothing must be worn.

9.PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

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Feature	Value / Description
Appearance (Physical State)	Liquid
Colour	Colorless
Smell	Light (Ammonia)
Odor Threshold	No data available
pH (diluted 10%)	8.0 – 10.0
Melting Point	Not applicable
Freezing point	-8 °C
Initial Boiling Point and Boiling Range	100 °C
Flash Point	No data available
Evaporation Rate	No data available
Flammability	Not applicable
Upper/Lower Flammable and Explosive Limits	Not applicable
Flammability Temperature	Not applicable
Explosive Properties	No data available

Feature	Value / Description
Oxidizing Properties	No data available
Vapor Pressure	No data available

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Vapor Density	No data available
Density (at 20 °C)	1.105 – 1.177 kg/m^3
Refractive Index (at 20 °C)	1.3947 – 1.3982
Resolution	Water soluble
Partition Coefficient (n-octanol/water)	No data available
Fluidity	No data available

Additional Quality Parameters (according to ISO 18611-1:2014)

Feature	**Unit**	**Min.**	**Max.**	**Testing Methods**
Urea Content (a)	% (m/m)	39	41	ISO 18611-2, Annex B and Annex C
Alkalinity (as NH_3)	% (m/m)	—	0.5	ISO 18611-2, Annex D
Biuret	% (m/m)	—	0.8	ISO 18611-2, Annex E
Feature	**Unit**	**Min.**	**Max.**	**Testing Methods**
Aldehydes	mg /kg	—	100	ISO 18611-2, Annex F
Insoluble Matter	mg /kg	—	50	ISO 18611-2, Annex G

Phosphate (PO_4)	mg /kg	—	1	ISO 18611-2, Annex H
Calcium (Ca)	mg /kg	—	1	ISO 18611-2, Annex I
Iron (Fe)	mg /kg	—	1	ISO 18611-2, Annex I
Magnesium (Mg)	mg /kg	—	1	ISO 18611-2, Annex I
Sodium (Na)	mg /kg	—	1	ISO 18611-2, Annex I
Potassium (K)	mg /kg	—	1	ISO 18611-2, Annex I
Authentication (Identity)	—	Identical to reference	—	ISO 18611-2, Annex J

10. STABILITY AND REACTIVITY

STABILITY Stable under normal temperature conditions. Above 80'C NH3 gas begins to be released. CONDITIONS TO AVOID AUS 40 reacts violently with calcium hypochlorite and sodium hypochlorite to produce explosive nitrogen trichloride gas.
MATERIALS TO AVOID Hypochlorite, alkali metals, Acids – keep away from oxidizing/strong oxidizing chemicals.

HAZARDOUS DECOMPOSITION PRODUCTS Fire or high heat may cause formation of harmful vapors (CO, CO2, NOx). (Ammonia or Amines.)

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxic Effects

Information on Possible Routes of Exposure

Routes of exposure anticipated: Skin, inhalation, accidental ingestion

Potential Acute Health Effects

Inhalation: Exposure to decomposition products may be hazardous to health.

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 Physical, Chemical and Toxicological Properties

There is no specific data for this.

Delayed and Immediate Effects of Short and Long Term Exposure, as well as Chronic Effects

Inhalation : Excessive exposure may cause respiratory irritation.

Ingestion: Ingestion of large amounts may cause nausea and vomiting.

Skin Contact: Prolonged or repeated contact may damage the skin.

Eye Contact: Contact with eyes may cause temporary stinging and redness.

Potential Chronic Health Effects

No known significant effects or critical hazards.

12.ECOLOGICAL INFORMATION

12.1 Toxicity

The substances in the product are not classified as hazardous for the environment.

12.2 Persistence and Degradability

be biodegradable .

12.3 Bioaccumulation Potential

This product is not expected to bioaccumulate in the environment via food chains .

12.4 Mobility in Soil

The product is water soluble.

12.5 Results of PBT and vPvB Assessment

Not applicable.

12.6 Other Adverse Effects

No known significant effects or critical hazards.

13. DISPOSAL INFORMATION

Waste treatment methods

Dispose of garbage and waste in accordance with local authority regulations. There is no harm in mixing it into sewage, water sources or soil. Excessive use of this chemical may be toxic to aquatic organisms.

14.TRANSPORTATION INFORMATION

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

Regulation on the Transport of Hazardous Materials by Road (Official Gazette dated 24/10/2013 and numbered 28201) Not classified.

Regulation on the Transport of Dangerous Goods by Rail (Official Gazette 16.07.1529418) Not classified.

Regulation on the Transport of Dangerous Goods by Sea Not Classified.

15.LEGISLATION INFORMATION

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National legislation

Republic of Turkey Ministry of Environment and Urbanization, Regulation No. 28848 dated 11 December 2013 on Classification, Labeling and Packaging of Substances and Mixtures.

of Labor and Social Security, Regulation No. 28733 dated 12 August 2013 on health and safety measures in working with chemical substances.

Of Labor and Social Security, Regulation No. 28695 dated July 2, 2013 on the use of personal protective equipment in workplaces.

Republic of Turkey Ministry of Labor and Social Security, Occupational Health and Safety Law No. 6331 dated 30 June 2012.

Of Environment and Urbanization, Waste Management Regulation No. 29314, dated April 2, 2015.

16.OTHER INFORMATION

Abbreviations and acronyms:

IMDG: International Maritime Dangerous Goods

IATA: International Air Transport Association

ADR: European Regulation for the International Carriage of Dangerous Goods by Road

Agreement

RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail

PBT: Persistent Bioaccumulative Toxic **vPvB :** Very Persistent and Very

Bioaccumulative

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PREPARED/EDITED/PUBLISHED THE SAFETY DATA SHEET

Chemical assessment Expert/Certificate No: NBC/04.22.06 & 08.08.2023

Preparation Date: 08.07.2025

Revision No:00

Revision Date:0

Reservation

This information relates only to a specific substance and should not be used in any combination or process where the same substance is used in combination with other substances. The information provided in this document is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. It is the user's responsibility to satisfy himself as to the suitability of this information for his own use.