MATERIAL SAFETY DATA SHEET

1. Product and company identification

Product name **ARI-340**

Manufacturer

Company Name Merichem Company

Address 5455 Old Spanish Trail
Houston, TX 77023
United States

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Only Representative

Company Name Merichem Europe Limited

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Lamarca, Cyprus

Recommended use Industrial desulfurization application

Limitations on use Not available.

MSDS No. Not available.

2. Hazards identification

Hazard classification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2

Carcinogenicity Category 2

Environmental hazards Not classified.

Label elements

Signal word Warning

Hazard statement

H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

Precautionary statement

Prevention

P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/face protection.
P201 + P202 Before use, obtain special instructions and learn how to work with these products safely.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards None known.

Supplemental information None.

3. Composition/information on ingredients

Substance or mixture Mixture

Chemical property	CAS Number	Concentration (%)
Water	7732-18-5	<50%
Proprietary Ingredient D	Proprietary *	<45%
Proprietary Ingredient A	Proprietary *	<12%
Proprietary Ingredient E	Proprietary *	<3%

Composition comments *Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Substance classification in accordance with GOST 12.1.007:
Proprietary Ingredient D (CAS-no. Proprietary): Class 4 (low-hazard substance).
Proprietary Ingredient A (CAS-no. Proprietary): Class 3 (moderately hazardous substance).
Proprietary Ingredient E (CAS-no. Proprietary): Class 4 (low-hazard substance).

4. First aid measures

First aid measures for different exposure routes

Inhalation Move to fresh air. Provide oxygen, if available, or artificial respiration, if needed. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms and effects Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Notes to physician Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General advice IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

General fire hazards The product is a difficultly burning material according to GOST 12.1.044.

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media None known.

Specific hazards during fire fighting During fire, gases hazardous to health may be formed.

Special fire fighting procedures Move containers from fire area if you can do so without risk.

Personal protective equipment for fire-fighting Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

Clean-up methods and materials and containment measures	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.

7. Handling and storage

Handling

Precautions	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get this material in contact with eyes. Avoid release to the environment.
Safe handling advice	Avoid prolonged exposure. Should be handled in closed systems, if possible. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the MSDS.
Technical measures	No specific recommendations.
Local and general ventilation	Provide adequate ventilation.

Storage

Technical measures	No specific recommendations.
Suitable storage conditions	Store locked up. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the MSDS).
Incompatible materials	For further information, please refer to section 10 of the MSDS.
Safe packaging materials	Store in original tightly closed container.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Engineering measures	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Personal protective equipment

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing. Use of an impervious apron is recommended.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Dark red liquid.
Physical state	Liquid.
Form	Liquid.
Color	Dark red.
Odor	Ammoniacal.
Odor threshold	Not available.
pH	9,3 (Approximate)
Melting point/freezing point	17,6 °F (-8 °C) (Approximate)
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	> 200,0 °F (> 93,3 °C)
Combustion temperature	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	20 - 30 torr
Density	Not available.
Viscosity	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Evaporation rate	Not available.
Relative density	1,26 (Approximate)
Percent volatile	55 % (Approximate)
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong alkalis. Strong oxidizing agents. Strong acids. Aluminum. Zinc.
Hazardous decomposition products	Contact with strong alkalis will liberate ammonia. Contact with aluminum or zinc may release flammable hydrogen gas. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Components	Species	Test Results
Proprietary Ingredient A (CAS Proprietary *)		
Acute		
Oral		
LD50	Rat	1100 mg/kg

Routes of exposure	Eye contact.
Symptoms	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.

Russian Federation. Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended.

Not Listed.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer. When administered at high doses in drinking water to male rats, Proprietary Ingredient A has induced renal tubular adenomas and adenocarcinomas. In two-stage studies of carcinogenicity in male rats treated by oral administration of Proprietary Ingredient A, the incidence of urinary tract tumors after pre-treatment with N-nitrosamines was increased.

IARC Monographs. Overall Evaluation of Carcinogenicity

Proprietary Ingredient A (CAS Proprietary *)	2B Possibly carcinogenic to humans.

Russian Federation. Sanitary-Epidemiological Rules,1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008

Not listed.

Toxic to reproduction This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicological data

Components		Species	Test Results
Proprietary Ingredient A			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	175 - 225 mg/l, 96 hours

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulation No data available.

Mobility in soil No data available for this product.

Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Local disposal regulations Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport information

ADR

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

Applicable regulations

Russian Federation. Sanitary-Epidemiological Rules,1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008

Not listed.

Ministry of Health and Social Development of Russian Federation. Order № 83 of 16.08.2004. List of hazardous and/or dangerous production factors and work under which preliminary and periodic medical examinations are conducted, methods of the examinations.

Proprietary Ingredient A (CAS Proprietary *) 1,2,21,1.

Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended.

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

References

GOST 30333-2007 Chemical production safety passport. General requirements.
GOST 31340-2013 Labeling of chemicals. General requirements.
GOST 32419-2013 Classification of chemical products. General requirements.
GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.
GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements.
GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination.
GOST 19433-88. Dangerous goods. Classification and marking.
GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.
GOST 32425-2013 Mixtures classification of hazard for environmental.
GOST 32423-2013 Mixtures classification of hazard for health.

Issued by

Not available.

Further information

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