



# MATERIAL SAFETY DATA SHEET

## 1. Product and company identification

<b>Product name</b>	<b>ARI-400</b>
<b>Manufacturer</b>	
<b>Company Name</b>	Merichem Company
<b>Address</b>	5455 Old Spanish Trail Houston, TX 77023 United States
<b>Emergency Telephone</b>	For Chemical Emergency ONLY: CHEMTREC®, Russia (toll free): 8-800-100-6346 (in country only)
<b>General Information</b>	+1 713-428-5000
<b>Fax</b>	+1 713-936-3634
<b>E-Mail</b>	msdsinquiry@merichem.com
<b>Only Representative</b>	
<b>Company Name</b>	Merichem Europe Limited
<b>Address</b>	Michail Georgiou 70 Atheniou P.C. 7600 Lamarca, Cyprus
<b>Recommended use</b>	Industrial desulfurization application
<b>Limitations on use</b>	Not available.
<b>MSDS No.</b>	Not available.

## 2. Hazards identification

<b>Hazard classification</b>		
<b>Physical hazards</b>	Corrosive to metals	Classified
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 2

### Label elements



**Signal word** Danger

### Hazard statement

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.

### Precautionary statement

#### Prevention

P234	Keep only in original container.
P260	Do not breathe mist or vapor.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

## Response

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P301 + P330 + P312	IF SWALLOWED: Rinse mouth. Obtain medical assistance if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical assistance if you feel unwell.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see this label).
P390	Absorb spillage to prevent material damage.

## Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

## Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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**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	< 90%
Proprietary Ingredient G	Proprietary *	< 6%
Proprietary Ingredient H	Proprietary *	< 6%

**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 G (CAS-no. Proprietary): Class 2 (highly hazardous substance).

Proprietary Ingredient H (CAS-no. Proprietary): Class 2 (highly hazardous substance).

## 4. First aid measures

### First aid measures for different exposure routes

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Provide oxygen, if available, or artificial respiration, if needed.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms and effects** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

**Notes to physician** Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General advice** If you feel unwell, seek medical advice (show the label where possible). 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 (CO<sub>2</sub>).

<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards during fire fighting</b>	During fire, gases hazardous to health may be formed.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk.
<b>Personal protective equipment for fire-fighting</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

## 6. Accidental release measures

<b>Personal precautions</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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.
<b>Environmental precautions</b>	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.
<b>Clean-up methods and materials and containment measures</b>	<p>This product is miscible in water.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.</p>

## 7. Handling and storage

### Handling

<b>Precautions</b>	Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Wear appropriate personal protective equipment. Do not taste or swallow. When using, do not eat, drink or smoke. Avoid release to the environment.
<b>Safe handling advice</b>	Avoid prolonged exposure. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the MSDS.
<b>Technical measures</b>	No specific recommendations.
<b>Local and general ventilation</b>	Provide adequate ventilation.

### Storage

<b>Technical measures</b>	No specific recommendations.
<b>Suitable storage conditions</b>	Store locked up. Store in a cool, dry place out of direct sunlight. Keep only in the original container. Store away from incompatible materials (see Section 10 of the MSDS).
<b>Incompatible materials</b>	Metals. For further information, please refer to section 10 of the MSDS.
<b>Safe packaging materials</b>	Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container.

## 8. Exposure controls/personal protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering measures</b>	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. Eye wash facilities and emergency shower must be available when handling this product.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	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.
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

<b>Eye protection</b>	Wear safety glasses with side shields (or goggles) and a face shield.
<b>Skin and body protection</b>	Wear appropriate chemical resistant clothing.
<b>Hygiene measures</b>	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. Keep away from food and drink. 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

<b>Appearance</b>	Light brown liquid.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Light brown.
<b>Odor</b>	Slight, sweet.
<b>Odor threshold</b>	Not available.
<b>pH</b>	6,5 Approximate.
<b>Melting point/freezing point</b>	32 °F (0 °C) Approximate.
<b>Initial boiling point and boiling range</b>	212 °F (100 °C) Approximate.
<b>Flash point</b>	> 200,0 °F (> 93,3 °C)
<b>Combustion temperature</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	38 mmHg Approximate.
<b>Density</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Miscible with water in all proportions.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Relative density</b>	0,96
<b>Percent volatile</b>	89 % Approximate.
<b>Other data</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	May be corrosive to metals.
<b>Stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong reducing agents. Metals.
<b>Hazardous decomposition products</b>	Toxic organic vapors/fumes. Hydrogen chloride. Toxic vapors/fumes of amines. Carbon oxides. Nitrogen oxides.

## 11. Toxicological information

<b>Acute toxicity</b>	Harmful if swallowed. May cause respiratory irritation.
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Components	Species	Test Results
Proprietary Ingredient G (CAS Proprietary *)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	1420 mg/kg
<i>Oral</i>		
LD50	Mouse	150 mg/kg
	Rat	240 mg/kg
<i>Other</i>		
LD50	Rat	13,9 mg/kg
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.	
<b>Symptoms</b>	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.	
<b>Skin corrosion/irritation</b>	Causes severe skin burns and eye damage.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>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.</b>		
Not Listed.		
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.	
<b>Russian Federation. Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008</b>		
Not listed.		
<b>Toxic to reproduction</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged exposure may cause chronic effects.	

## 12. Ecological information

### Ecotoxicological data

Components	Species	Test Results
Proprietary Ingredient G		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50 Bluegill ( <i>Lepomis macrochirus</i> )	0,223 - 0,46 mg/l, 96 hours
<b>Ecotoxicity</b>	Toxic to aquatic life.	
<b>Persistence and degradability</b>	No data is available on the degradability of this product.	
<b>Bioaccumulation</b>		
<b>Mobility in soil</b>	This product is miscible in water.	
<b>Other hazardous effects</b>	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

<b>Residual waste</b>	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).
<b>Contaminated packaging</b>	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**

D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]  
 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**

**UN number** UN1760  
**UN proper shipping name** CORROSIVE LIQUID, N.O.S. (Quaternary Ammonium compounds)  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Label(s)** 8  
**Hazard No. (ADR)** 80  
**Tunnel restriction code** E  
**Packing group** III  
**Environmental hazards** No.  
**Special precautions for user** Read safety instructions, MSDS and emergency procedures before handling.

**IATA**

**UN number** UN1760  
**UN proper shipping name** Corrosive liquid, n.o.s. (Quaternary Ammonium compounds)  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards** No.  
**ERG Code** 8L  
**Special precautions for user** Read safety instructions, MSDS and emergency procedures before handling.

**IMDG**

**UN number** UN1760  
**UN proper shipping name** CORROSIVE LIQUID, N.O.S. (Quaternary Ammonium compounds)  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards**  
**Marine pollutant** No.  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, MSDS and emergency procedures before handling.

**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.**

Not listed.

**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

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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

The contents of this Safety Data Sheet are Merichem Company confidential and proprietary information.

### Disclaimer

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### Issue date

18-November-2015

### Revision date

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