

**From:** Bradley Luedtke <bdluedtke@mmm.com>  
**Sent:** Tuesday, March 29, 2022 7:39 AM  
**To:** Schrank, Jayson S - DNR  
**Cc:** Lijane Brunner  
**Subject:** 3M Menomonie Boiler Feedwater Release Follow Up  
**Attachments:** Boiler MP 1811\_SDS.pdf; RLT 35\_SDS.pdf; 3M Menomonie Boiler Feedwater Spill Follow Up.docx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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Jayson,

This is to serve as an initial written report from 3M Menomonie for the 75 gallon boiler feedwater release yesterday. There are two additives in this water, see attached, they are added to achieve the following chemical levels in the water-

Cyclohexylamine- CAS# 108-91-8- 10ppm  
Morpholine- CAS# 110-91-8- 10ppm  
Diethylaminoethanol- CAS# 100-37-8- 15ppm  
Sodium Metabisulfite- 7661-57-4- 30ppm  
Inert polymers- No CAS#- 300ppm

Please let me know if any additional information is needed.

Thank you



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### 3M Menomonie 3/28/2022 Boiler Feedwater Spill Wisconsin NR 708.09 Follow Up

GENERAL. Unless sub. (2) is applicable, responsible parties shall submit a final report for completed immediate action at the site or facility which addresses the following criteria, where applicable, and a letter of compliance documenting that the immediate response action is complete and no further action is necessary to respond to a hazardous substance discharge or environmental pollution:

(a) The type of hazardous substance discharged or the type of environmental pollution, including the toxicity, mobility and volume of the contamination.

3M response- over 99.9% water, see SDSs for additives

(b) The duration of the discharge.

3M response- ~20 min

(c) Time until the discharge or environmental pollution was responded to and properly contained or eliminated.

3M response- determined not be needed by 3M, chemicals in water pose minimal environmental risk

(d) Any mitigation efforts that may have accelerated the migration of the environmental pollution or hazardous substances, such as any fire mitigation methods.

3M response- none that would apply to this incident

(e) Weather conditions at the site or facility, such as any precipitation that may have accelerated the migration of the contamination, from the time of the discharge until the response was completed.

3M response- no adverse weather conditions at time of the incident

(f) Migration potential of the contamination, including soil conditions, proximity to surface water bodies, location of drains or storm sewers, depth to groundwater and the integrity of any containment area.

3M response- area drains to stormwater pond on northwest side of property

(g) The nature and scope of any immediate action conducted.

3M response- no action taken

(h) The results of any sampling conducted to confirm the adequacy of the response, taken in accordance with s. [NR 708.05 \(3\) \(c\)](#).

3M response- no sampling conducted

(i) Visual and olfactory evidence of contamination.

3M response- wet soil, no smell

(j) Actual or potential environmental impacts.

3M response- wet soil with trace amounts of boiler treatment chemicals (part per million levels)

(k) Proximity of contamination to receptors.

3M response- stormwater runoff from this area goes to stormwater infiltration basin on northwest side of property

(L) Present and anticipated future land use.

3M response- land is a lawn area and will continue to be for foreseeable future

(m) Whether or not routes of exposure are protective and the environment has been restored to the extent practicable.

3M response- material released poses minimal potential harm and no restoration efforts are needed

(n) Any other information that the department considers relevant.

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Name : Boiler MP 1811  
 Product code : BT0008

#### 1.2. Recommended use and restrictions on use

Recommended use : Boiler water treatment

#### 1.3. Supplier

Kurita America Inc.  
 6600 94th Ave North  
 Minneapolis, MN 55445 - USA  
 T 866-663-7632  
[kai\\_sds@kurita-water.com](mailto:kai_sds@kurita-water.com) - [www.kuritaamerica.com](http://www.kuritaamerica.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTEL, For Chemical Emergency Call 800-255-3924 24hr/day 7days/week  
 Kurita America: 866-663-7633 International: +01-813-248-0585

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Acute toxicity (inhalation:gas) Category 4	H332	Harmful if inhaled.
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 1	H318	Causes serious eye damage.

Full text of H- and EUH-statements: see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

: Danger

Hazard statements (GHS US) :

: H302+H332 - Harmful if swallowed or if inhaled  
 H315 - Causes skin irritation.  
 H318 - Causes serious eye damage.

Precautionary statements (GHS US) :

: P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P264 - Wash hands, forearms and face thoroughly after handling.  
 P270 - Do not eat, drink or smoke when using this product.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
 P302+P352 - If on skin: Wash with plenty of water.  
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 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.  
 P312 - Call a poison center or doctor if you feel unwell.  
 P321 - Specific treatment (see supplemental first aid instruction on this label).  
 P330 - Rinse mouth.  
 P332+P313 - If skin irritation occurs: Get medical advice/attention.  
 P362+P364 - Take off contaminated clothing and wash it before reuse.  
 P501 - Dispose of contents/container to hazardous or special waste collection point, in

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accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Sodium metabisulfite	(CAS-No.) 7681-57-4	10 – 20	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 3, H402

Full text of hazard classes, H- and EUH-statements: see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Call a poison center or a doctor if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
- First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Rinse mouth. Call a poison center or a doctor if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after skin contact : Irritation.
- Symptoms/effects after eye contact : Serious damage to eyes.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Specific hazards arising from the chemical

- Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

#### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material.

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Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Boiler MP 1811</b>	
No additional information available	
<b>Sodium metabisulfite (7681-57-4)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	Sodium metabisulfite
ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2020

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Colourless

Odour : No data available

Odour threshold : No data available

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pH	: 7
Melting point	: Not applicable
Freezing point	: 1 / 34°F
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapour pressure	: Same as water
Relative vapour density at 20 °C	: Same as water
Relative density	: 10.1
Solubility	: Complete in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

### 9.2. Other information

VOC content : 0 % (w/w)

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

ATE US (oral)	500 mg/kg bodyweight
ATE US (gases)	4500 ppmv/4h
<b>Sodium metabisulfite (7681-57-4)</b>	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 5.5 mg/l air Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
ATE US (oral)	500 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.  
pH: 7

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Serious eye damage/irritation	: Causes serious eye damage. pH: 7
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

#### Transportation of Dangerous Goods

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

### 15.2. International regulations

#### CANADA

##### Sodium metabisulfite (7681-57-4)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

##### National regulations

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Sodium metabisulfite(7681-57-4)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

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Revision date : 04/15/2021

Full text of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H402	Harmful to aquatic life

Kurita - SDS US (GHS HazCom 2012)

**Author:** Kurita Water Industries Ltd.

**Revision Notes:** Updated to GHS format

**Disclaimer:**

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### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Name : RLT 35  
 Product code : BT0036

#### 1.2. Recommended use and restrictions on use

Recommended use : Return Line Treatment

#### 1.3. Supplier

Kurita America Inc.  
 6600 94th Ave North  
 Minneapolis, MN 55445 - USA  
 T 866-663-7632  
[kai\\_sds@kurita-water.com](mailto:kai_sds@kurita-water.com) - [www.kuritaamerica.com](http://www.kuritaamerica.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTEL, For Chemical Emergency Call 800-255-3924 24hr/day 7days/week  
 Kurita America: 866-663-7633 International: +01-813-248-0585

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral), Category 4	H302 Harmful if swallowed.
Acute toxicity (dermal), Category 4	H312 Harmful in contact with skin.
Acute toxicity (inhalation:dust,mist) Category 4	H332 Harmful if inhaled.
Skin corrosion/irritation, Category 1	H314 Causes severe skin burns and eye damage.
Serious eye damage/eye irritation, Category 1	H318 Causes serious eye damage.
Specific target organ toxicity — Repeated exposure, Category 2	H373 May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment — Acute Hazard, Category 3	H402 Harmful to aquatic life

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
 H314 - Causes severe skin burns and eye damage.  
 H318 - Causes serious eye damage.  
 H373 - May cause damage to organs through prolonged or repeated exposure.  
 H402 - Harmful to aquatic life

Precautionary statements (GHS US) :

P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P264 - Wash hands, forearms and face 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.  
 P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
 P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.  
 P302+P352 - If on skin: Wash with plenty of water.  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 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.  
 P312 - Call a poison center or doctor if you feel unwell.

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P314 - Get medical advice/attention if you feel unwell.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P322 - Specific treatment (see supplemental first aid instruction on this label)  
P330 - Rinse mouth.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P363 - Wash contaminated clothing before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Cyclohexylamine	(CAS-No.) 108-91-8	10 – 15	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Aquatic Acute 3, H402
morpholine	(CAS-No.) 110-91-8	10 – 15	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402
Diethylaminoethanol	(CAS-No.) 100-37-8	10 – 15	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1, H314 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 3, H402

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.  
First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.  
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause respiratory irritation.  
Symptoms/effects after skin contact : Burns.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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### 5.2. Specific hazards arising from the chemical

- Fire hazard : Not flammable.  
Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothing.

#### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage.  
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area.  
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.  
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>RLT 35</b>	
No additional information available	
<b>Cyclohexylamine (108-91-8)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	Cyclohexylamine
ACGIH OEL TWA [ppm]	10 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2021

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<b>morpholine (110-91-8)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	Morpholine
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: Eye dam; URT irr. Notations: Skin; A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2021
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Morpholine
OSHA PEL TWA [1]	70 mg/m <sup>3</sup>
OSHA PEL TWA [2]	20 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>Diethylaminoethanol (100-37-8)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	2-Diethylaminoethanol
ACGIH OEL TWA [ppm]	2 ppm
Remark (ACGIH)	TLV® Basis: URT irr; CNS convul. Notations: Skin
Regulatory reference	ACGIH 2021
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	2-Diethylaminoethanol
OSHA PEL TWA [1]	50 mg/m <sup>3</sup>
OSHA PEL TWA [2]	10 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Dust/aerosol mask with filter type P1.

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
Colour : Colorless/yellowish  
Odour : Mild

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Odour threshold	: No data available
pH	: 13 – 13.5
Melting point	: Not applicable
Freezing point	: -7 °C / 19°F
Boiling point	: No data available
Flash point	: > 61 °C / >140°F
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.99
Density	: 8.26 lb/gal
Solubility	: Complete.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
No data availableViscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Harmful in contact with skin.
Acute toxicity (inhalation)	: Harmful if inhaled.

ATE US (oral)	1111.111 mg/kg bodyweight
ATE US (dermal)	1240.918 mg/kg bodyweight
ATE US (dust,mist)	5 mg/l/4h

<b>Cyclohexylamine (108-91-8)</b>	
LD50 oral rat	≈ 432 mg/kg bodyweight Animal: rat, Animal sex: male, 95% CL: 376 - 496
LD50 dermal rabbit	631 – 1000 mg/kg bodyweight (Other, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 0.9 mg/l (4 h, Rat, Male, Experimental value, Inhalation)

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<b>Cyclohexylamine (108-91-8)</b>	
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	1100 mg/kg bodyweight

<b>morpholine (110-91-8)</b>	
LD50 oral rat	≈ 1900 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	≈ 500 mg/kg bodyweight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	300 mg/kg bodyweight
ATE US (gases)	4500 ppmv/4h
ATE US (vapours)	11 mg/l/4h
ATE US (dust,mist)	1.5 mg/l/4h

<b>Diethylaminoethanol (100-37-8)</b>	
LD50 oral rat	≈ 1320 mg/kg bodyweight Animal: rat
LD50 dermal rat	1100 mg/kg Source: ECHA
LD50 dermal rabbit	≈ 1100 mg/kg bodyweight Animal: rabbit
LC50 Inhalation - Rat	≈ 4.6 mg/l air Animal: rat
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	885 mg/kg bodyweight
ATE US (gases)	4500 ppmv/4h
ATE US (vapours)	4.6 mg/l/4h
ATE US (dust,mist)	1.5 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns.  
pH: 13 – 13.5

Serious eye damage/irritation : Causes serious eye damage.  
pH: 13 – 13.5

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

<b>morpholine (110-91-8)</b>	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

<b>Cyclohexylamine (108-91-8)</b>	
NOAEL (oral, rat, 90 days)	≈ 15 mg/kg bodyweight Animal: rat, Remarks on results: other:

<b>morpholine (110-91-8)</b>	
LOAEL (oral, rat, 90 days)	500 mg/kg bodyweight Animal: rat, Animal sex: female

<b>Diethylaminoethanol (100-37-8)</b>	
LOAEC (inhalation, rat,dust/mist/fume, 90 days)	0.12 mg/l air Animal: rat, Guideline: other:
NOAEL (oral, rat, 90 days)	50 – 400 mg/kg bodyweight Animal: rat
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : Burns.

Symptoms/effects after eye contact : Serious damage to eyes.

Symptoms/effects after ingestion : Burns.

# RLT 35

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Harmful to aquatic life.

RLT 35	
LC50 - Fish [1]	304 mg/l Fathead Minnows, 96 Hr
LC50 - Other aquatic organisms [1]	65 mg/l Ceriodaphnia dubia, 48 Hr
LOEC (acute)	100 Ceriodaphnia dubia 48 hr // 350 mg/l Fathead Minnow 96 hr
NOEC (acute)	50 Ceriodaphnia dubia 48 hr // 175 mg/l Fathead Minnow 96 hr

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Additional information : Flammable vapours may accumulate in the container.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Transport document description (DOT) : UN1760 Corrosive liquids, n.o.s. (Morpholine, Cyclohexylamine, Diethylaminoethanol), 8, PG II  
UN-No.(DOT) : UN1760  
Proper Shipping Name (DOT) : Corrosive liquids, n.o.s.  
Morpholine, Cyclohexylamine, Diethylaminoethanol  
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136  
Packing group (DOT) : PG II - Medium Danger  
Hazard labels (DOT) : 8 - Corrosive



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 242

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DOT Special Provisions (49 CFR 172.102)	: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number	: 154
Other information	: No supplementary information available.

### Transportation of Dangerous Goods

Transport document description (TDG)	: UN1760 CORROSIVE LIQUID, N.O.S. (MORPHOLINE, CYCLOHEXYLAMINE, DIETHYLAMINOETHANOL), 8, II
UN-No. (TDG)	: UN1760
Proper Shipping Name (TDG)	: CORROSIVE LIQUID, N.O.S.
TDG Primary Hazard Classes	: 8 - Class 8 - Corrosives
Packing group (TDG)	: II - Medium Danger
TDG Special Provisions	: 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S.; (b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S.; (c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S.; (d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.; or (e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a) UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS.
Explosive Limit and Limited Quantity Index	: 1 L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 1 L

### Transport by sea

UN-No. (IMDG)	: 1760
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Proper Shipping Name (IMDG)	: CORROSIVE LIQUID, N.O.S.
Class (IMDG)	: 8 - Corrosive substances
Packing group (IMDG)	: II - substances presenting medium danger
Limited quantities (IMDG)	: 1 L

### Air transport

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Cyclohexylamine (108-91-8)	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb

### 15.2. International regulations

#### CANADA

Cyclohexylamine (108-91-8)	
Listed on the Canadian DSL (Domestic Substances List)	
morpholine (110-91-8)	
Listed on the Canadian DSL (Domestic Substances List)	
Diethylaminoethanol (100-37-8)	
Listed on the Canadian DSL (Domestic Substances List)	

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Cyclohexylamine(108-91-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
morpholine(110-91-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Diethylaminoethanol(100-37-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/21/2021

# RLT 35

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Kurita - SDS US (GHS HazCom 2012)

**Author:** Kurita Water Industries Ltd.

**Revision Notes:** Updated to GHS format

**Disclaimer:**

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**From:** Bradley Luedtke <bdluedtke@mmm.com>  
**Sent:** Tuesday, March 29, 2022 3:05 PM  
**To:** Schrank, Jayson S - DNR  
**Cc:** Lijane Brunner  
**Subject:** RE: 3M Menomonie Boiler Feedwater Release Follow Up

**CAUTION: This email originated from outside the organization.  
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Jayson,

The release occurred at the location of the red dot on the aerial image shown below.



**From:** Bradley Luedtke <bdluedtke@mmm.com>  
**Sent:** Thursday, March 31, 2022 3:02 PM  
**To:** Schrank, Jayson S - DNR  
**Cc:** Lijane Brunner  
**Subject:** RE: 3M Menomonie Boiler Feedwater Release Follow Up  
**Attachments:** IMG\_5266.jpg

**CAUTION: This email originated from outside the organization.  
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Jayson,

Attached is a picture I took this afternoon of the affected area.



**Brad Luedtke** | Environmental Engineer  
**USAC EHS Operations**  
3M Menomonie | Menomonie, WI 54751 | United States  
Office: +1 715 578 2318  
[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)



---

**From:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Sent:** Thursday, March 31, 2022 2:42 PM  
**To:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>  
**Cc:** Lijane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>  
**Subject:** [EXTERNAL] RE: 3M Menomonie Boiler Feedwater Release Follow Up

Thank you Brad. Last question I have – are there any photos of the release after it occurred? Or current photos of the spill site you can share? I would like those for my file, as well.

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

**Jayson Schrank**

He/ Him/ His  
715-410-8841  
[Jayson.Schrank@wisconsin.gov](mailto:Jayson.Schrank@wisconsin.gov)

---

**From:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>  
**Sent:** Thursday, March 31, 2022 2:35 PM  
**To:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>  
**Subject:** RE: 3M Menomonie Boiler Feedwater Release Follow Up

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Jayson,

For the CAS numbers listed on the SDS of the RLT35, I've included some data collected from our reference database for your consideration:

CAS 108-91-8 Cyclohexylamine

Based on the published experimental vapor pressure of 10.7 mmHg at 20 degrees C, if released into the environment, this chemical is expected to exist primarily in the vapor phase. Additionally, this chemical has been found to be readily biodegradable based on a 20-day OECD 301D test that reported >90% BOD.

CAS 110-91-8 Morpholine

Based on the published experimental vapor pressure of 10.1 mmHg at 25 degrees C, if released into the environment, this chemical is expected to exist primarily in the vapor phase. Additionally, this chemical has been found to be readily biodegradable based on a 25-day OECD 301E test that reported 93% biodegradation with a lag-phase of 15 days.

CAS 100-37-8 Diethylaminoethanol

This chemical has been found to be readily biodegradable based on a 22-day OECD 301a test that reported 95% biodegradation.

Please contact me with any further questions



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[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)



---

**From:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Sent:** Wednesday, March 30, 2022 9:02 AM  
**To:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>  
**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>  
**Subject:** [EXTERNAL] Re: 3M Menomonie Boiler Feedwater Release Follow Up

Yes that should be fine.

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**From:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>  
**Sent:** Wednesday, March 30, 2022 8:59:27 AM  
**To:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>  
**Subject:** RE: 3M Menomonie Boiler Feedwater Release Follow Up

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Jayson,

Can we discuss this further in a call tomorrow at 10:00?

Thanks

**3M** Science.  
Applied to Life.™

**Brad Luedtke** | Environmental Engineer  
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3M Menomonie | Menomonie, WI 54751 | United States  
Office: +1 715 578 2318  
[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)



---

**From:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Sent:** Tuesday, March 29, 2022 4:05 PM  
**To:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>  
**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>  
**Subject:** [EXTERNAL] RE: 3M Menomonie Boiler Feedwater Release Follow Up

Thanks Brad. I will give you a call once I talk with Michelle – likely sometime tomorrow. I have some concerns about the compounds – specifically in RLT 35 mixture. I would recommend a surface scrape of the area to remove material that was spilled. I can explain further tomorrow, but the material released contains hazardous substances that was released to an impervious surface. Removing and disposing would be the best course of action.

Talk soon,

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

### **Jayson Schrank**

He/ Him/ His

Regional Spills Coordinator / Hydrogeologist

Remediation & Redevelopment Program

Wisconsin Dept. of Natural Resources

890 Spruce Street, Baldwin, WI 54002

**Cell Phone: 715-410-8841**

[Jayson.Schrank@wisconsin.gov](mailto:Jayson.Schrank@wisconsin.gov)



[dnr.wi.gov](http://dnr.wi.gov)



---

**From:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>

**Sent:** Tuesday, March 29, 2022 3:05 PM

**To:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>

**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>

**Subject:** RE: 3M Menomonie Boiler Feedwater Release Follow Up

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Jayson,

The release occurred at the location of the red dot on the aerial image shown below.



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**USAC EHS Operations**  
3M Menomonie | Menomonie, WI 54751 | United States  
Office: +1 715 578 2318  
[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)



---

**From:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>  
**Sent:** Tuesday, March 29, 2022 1:30 PM  
**To:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>



**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>

**Subject:** [EXTERNAL] RE: 3M Menomonie Boiler Feedwater Release Follow Up

Thank you Brad. Please also send over a map indicating where the spill occurred and whether or not the spill was inside the facility or outside.

Thanks again. Once I have that I can review and send the materials over to Michelle Asher with the Stormwater Program.

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Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

**Jayson Schrank**

He/ Him/ His

715-410-8841

[Jayson.Schrank@wisconsin.gov](mailto:Jayson.Schrank@wisconsin.gov)

---

**From:** Bradley Luedtke <[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)>

**Sent:** Tuesday, March 29, 2022 7:39 AM

**To:** Schrank, Jayson S - DNR <[jayson.schrank@wisconsin.gov](mailto:jayson.schrank@wisconsin.gov)>

**Cc:** LiJane Brunner <[lhbrunner@mmm.com](mailto:lhbrunner@mmm.com)>

**Subject:** 3M Menomonie Boiler Feedwater Release Follow Up

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Jayson,

This is to serve as an initial written report from 3M Menomonie for the 75 gallon boiler feedwater release yesterday. There are two additives in this water, see attached, they are added to achieve the following chemical levels in the water-

Cyclohexylamine- CAS# 108-91-8- 10ppm

Morpholine- CAS# 110-91-8- 10ppm

Diethylaminoethanol- CAS# 100-37-8- 15ppm

Sodium Metabisulfite- 7661-57-4- 30ppm

Inert polymers- No CAS#- 300ppm

Please let me know if any additional information is needed.

Thank you



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**USAC EHS Operations**  
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[bdluedtke@mmm.com](mailto:bdluedtke@mmm.com)





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