



MC40+ Hydronic Heating System Cleaner & Descaler

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 10/29/2021 Revision date: 6/18/2022 Supersedes: 6/18/2022 Version: 1.2

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : MC40+ Hydronic Heating System Cleaner & Descaler

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Water treatment additive.
Recommended use : Corrosion inhibitor, Scale inhibitor

1.3. Supplier

ADEY Innovation LLC
1209 Orange Street
Wilmington, DE 19801
United States of America
T +1 412-406-8292

1.4. Emergency telephone number

Emergency number : +1 412-406-8292
In case of emergency, call 911

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2 H319 Causes serious eye irritation
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : H319 - Causes serious eye irritation
Precautionary statements (GHS US) : P264 - Wash hands thoroughly after handling.
P280 - Wear eye protection.
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.

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Citric Acid	CAS-No.: 77-92-9	80.6	Eye Irrit. 2, H319
MALIC ACID	CAS-No.: 6915-15-7	19.39	Eye Irrit. 2, H319

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: If medical advice is needed, have product container or label at hand.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms occur.
First-aid measures after skin contact	: Take off contaminated clothing. Wash skin with plenty of water. Get medical attention if symptoms occur.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Drink plenty of water. If large quantities are ingested, seek medical advice/attention.

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

Potential Adverse human health effects and symptoms	: Irritation: severely irritant to eyes.
Symptoms/effects after inhalation	: Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	: May cause slight irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation. redness, itching, tears.
Symptoms/effects after ingestion	: Ingestion is not considered a potential route of exposure. May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.

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 : Use extinguishing media appropriate for surrounding fire.

5.2. Specific hazards arising from the chemical

Fire hazard	: The product is not flammable.
Explosion hazard	: Product is not explosive.
Reactivity in case of fire	: Not known.
Hazardous combustion products	: Toxic fumes may be released
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

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5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: No special measures required.
Firefighting instructions	: Use extinguishing media appropriate for surrounding fire.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Specific methods	: Does not require any specific or particular technical measures.
Other information	: The product is not flammable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid release to the environment.

6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate spillage area. Stop leak if safe to do so. Avoid contact with skin and eyes. Avoid creating or spreading dust.
Measures in case of dust release	: Where excessive dust may result, use approved respiratory protection equipment.

6.1.2. For emergency responders

Protective equipment	: Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate area. Stop leak if safe to do so. Avoid contact with skin and eyes. Avoid creating or spreading dust.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: No special measures required.
Methods for cleaning up	: Clean up immediately by sweeping or vacuum. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Minimize generation of dust.
Methods and material for containment and cleaning up	: Sweep up and collect in a suitable container . Avoid dust formation.
Other information	: Dispose of in accordance with relevant local regulations.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of solid materials or residues refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid creating or spreading dust.
Safe use of the product	: Use as directed on label.
Hygiene measures	: Always wash hands after handling the product. Do not eat, drink or smoke when using this product.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of reach of children.
Incompatible products	: Store apart from materials listed in section 10.
Incompatible materials	: Strong acids. Strong oxidizing agents.
Storage area	: Store in a well-ventilated place.
Special rules on packaging	: Keep only in original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

Citric Acid (77-92-9)

No additional information available

MALIC ACID (6915-15-7)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure adequate ventilation.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wear protective clothing. In accordance with 29 CFR 1910.132.

Hand protection:				
Protective gloves. In accordance with 29 CFR 1910.138				
Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves, Reusable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	> 0.11	
Eye protection:				
Chemical goggles or safety glasses. In accordance with 29 CFR 1910.133, ANSI Z87.1 - 1989				
Type	Field of application		Characteristics	
Safety glasses, Safety goggles	Dust, Fine dust		With side shields	
Skin and body protection:				
Wear suitable protective clothing				
Respiratory protection:				
In case of inadequate ventilation wear respiratory protection. In accordance with 29 CFR 1910.134				

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Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Color	: pink red
Odor	: characteristic
Odor threshold	: No data available
pH	: < 2
Melting point	: 302 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1.8
Solubility	: Soluble.
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
Explosion limits	: No data available
Explosive properties	: Product is not explosive.
Oxidizing properties	: Product is not classified as oxidizing.

9.2. Other information

VOC content	: 20 % (w/w)
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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).

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10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

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) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Citric Acid (77-92-9)

ATE US (oral)	11700 mg/kg body weight
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Skin corrosion/irritation : Not classified
pH: < 2

Serious eye damage/irritation : Causes serious eye irritation.
pH: < 2

Respiratory or skin sensitization : 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

Potential Adverse human health effects and symptoms : Irritation: severely irritant to eyes.

Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.

Symptoms/effects after skin contact : May cause slight irritation.

Symptoms/effects after eye contact : Causes serious eye irritation. redness, itching, tears.

Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure. May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Ecology - water : No data available on ecotoxicity.

Citric Acid (77-92-9)

LC50 - Fish [1]	> 100 mg/l
EC50 - Other aquatic organisms [1]	85 mg/l waterflea

12.2. Persistence and degradability

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Persistence and degradability	No data available.
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Citric Acid (77-92-9)	
Persistence and degradability	Biodegradable.

12.3. Bioaccumulative potential

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Bioaccumulative potential	No data available.

Citric Acid (77-92-9)	
Partition coefficient n-octanol/water (Log Pow)	-1.72
Bioaccumulative potential	Not expected to be bioaccumulative.

12.4. Mobility in soil

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Ecology - soil	Soluble in water.

12.5. Other adverse effects

Other adverse effects : None known.
Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

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IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

No data available

TDG

No data available

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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

15.2. International regulations

CANADA

Citric Acid (77-92-9)

Listed on the Canadian DSL (Domestic Substances List)

MALIC ACID (6915-15-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

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National regulations

Citric Acid (77-92-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

MALIC ACID (6915-15-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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

SECTION 16: Other information

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Full text of H-phrases

H319	Causes serious eye irritation
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NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

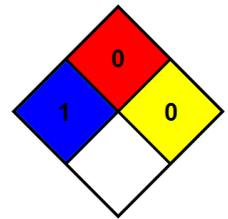
Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : B - Safety glasses, Gloves



Safety Data Sheet (SDS), USA

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