SAFETY DATA SHEET

MOTOR MEDIC® SUPER HEAVY DUTY RADIATOR FLUSH

Version	Revision Date:	SDS Number:	Date of last issue: 07/30/2018
2.0	09/07/2018	600000001496	Date of first issue: 07/30/2018

SECTION 1. IDENTIFICATION

Product name	:	MM SUPER RADIATOR FLUSH 12/22 OZ
Product code	:	C2124

Manufacturer or supplier's details

Company name of supplier	:	Niteo Products, LLC
Address	:	Dallas TX 75225
Email Address	:	EHS@niteoproducts.com
Telephone	:	1-844-696-4836
Emergency telephone number	:	1-800-424-9300 / 1-703-741-5970

Recommended use of the chemical and restrictions on use

Recommended use	:	RADIATOR FLUSH
Restrictions on use	:	Use only outdoors or in a well-ventilated area.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Carcinogenicity	:	Category 2
Reproductive toxicity	:	Category 1B
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 2 (Respiratory Tract)

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
May damage fertility or the unborn child.
May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements :

Prevention:

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.
Wash skin thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

Storage:

Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Citric acid	77-92-9	>= 5 - < 10
Tetrasodium EDTA	64-02-8	>= 1 - < 5
Ethylene glycol monobutyl ether	111-76-2	>= 1 - < 5
N-Methylpyrrolidone	872-50-4	>= 1 - < 5
Potassium hydroxide	1310-58-3	>= 1 - < 3
Benzenesulfonic acid, C10-16-alkyl derivs.	68584-22-5	>= 1 - < 5
Trisodium nitrilotriacetate	5064-31-3	>= 0.1 - < 1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If on clothes, remove clothes. Remove contaminated clothing. If irritation develops, get medical attention. If on skin, rinse well with water. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Obtain medical attention. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure if inhaled.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Nitrogen oxides (NOx) Carbon oxides
Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Avoid breathing dust.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Avoid contact with skin and eyes.
Dispose of rinse water in accordance with local and national regulations.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

Ethylene glycol monobutyl ether	111-76-2	TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m3	NIOSH REL
		TWA	50 ppm 240 mg/m3	OSHA Z-1
		TWA	25 ppm 120 mg/m3	OSHA P0
N-Methylpyrrolidone	872-50-4	TWA	10 ppm	US WEEL
Potassium hydroxide	1310-58-3	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		C	2 mg/m3	OSHA P0

Hazardous components without workplace control parameters

Components	CAS-No.
Citric acid	77-92-9
Tetrasodium EDTA	64-02-8
Benzenesulfonic acid, C10-16-alkyl derivs.	68584-22-5
Trisodium nitrilotriacetate	5064-31-3

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Ethylene glycol monobutyl ether	111-76-2	Butoxyacetic acid (BAA)	Urine	End of shift (As soon as possible after exposure ceases)	200 mg/g Creatinine	ACGIH BEI
N-Methylpyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection

Remarks : Wear resistant gloves (consult your safety equipment supplier). The suitability for a specific workplace should be discussed with the producers of the protective gloves. Discard

gloves that show tears, pinholes, or signs of wear.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear as appropriate:
Impervious clothing
Safety shoes

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not smoke.
When using do not eat or drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	No data available
Odour	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	estimated > 93.4 °C
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1.0633 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Hazardous polymerisation does not occur.
Conditions to avoid	:	No data available
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Eye contact
Skin contact
Ingestion

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 19.52 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Components:

Citric acid:

Acute oral toxicity	:	LD50 (Mouse): 6,730 mg/kg

Tetrasodium EDTA:

Acute oral toxicity	:	LD50 (Rat, female): 1,780 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 1 - 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Ethylene glycol monobutyl ether:

Acute oral toxicity : LD50 (Guinea pig): 1,200 mg/kg

Acute inhalation toxicity : LC50 (Guinea pig): > 633 ppm
Exposure time: 1 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Guinea pig): > 2,000 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

N-Methylpyrrolidone:

Acute oral toxicity : LD50 (Rat): 4,150 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): 8,000 mg/kg

Potassium hydroxide:

Acute oral toxicity : LD50 (Rat): 333 mg/kg

Benzenesulfonic acid, C10-16-alkyl derivs.:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Information given is based on data obtained from similar substances.

Acute inhalation toxicity : LC50 (Rat): > 1.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Information given is based on data obtained from similar substances.

Trisodium nitrilotriacetate:

Acute oral toxicity : LD50 (Rat, male and female): 1,740 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat): 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Components:

Citric acid:

Result: Possibly irritating to skin

Tetrasodium EDTA:

Species: Rabbit
Result: No skin irritation

Ethylene glycol monobutyl ether:

Result: Irritating to skin.

N-Methylpyrrolidone:

Assessment: Irritating to skin.
Result: irritating

Potassium hydroxide:

Result: Corrosive after 3 minutes or less of exposure

Benzenesulfonic acid, C10-16-alkyl derivs.:

Species: Rabbit
Result: Mild skin irritation

Trisodium nitrilotriacetate:

Result: Possibly irritating to skin

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

Components:

Citric acid:

Result: Irritating to eyes.

Tetrasodium EDTA:

Result: Irritating to eyes.

Ethylene glycol monobutyl ether:

Result: Irritating to eyes.
Assessment: Irritating to eyes.

N-Methylpyrrolidone:

Result: Irritation to eyes, reversing after 7 to 21 days
Assessment: Irritating to eyes.

Potassium hydroxide:

Result: Irreversible effects on the eye
Assessment: Corrosive

Benzenesulfonic acid, C10-16-alkyl derivs.:

Species: Rabbit
Result: Irritation to eyes, reversing within 7 days

Trisodium nitrilotriacetate:

Result: Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Tetrasodium EDTA:

Test Type: Maximisation Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Remarks: Information given is based on data obtained from similar substances.

N-Methylpyrrolidone:

Assessment: Does not cause skin sensitisation.
Result: Did not cause sensitisation on laboratory animals.

Benzenesulfonic acid, C10-16-alkyl derivs.:

Assessment: Does not cause skin sensitisation.

Trisodium nitrilotriacetate:

Test Type: Maximisation Test
Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 406

Germ cell mutagenicity

Not classified based on available information.

Components:

Tetrasodium EDTA:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

Ethylene glycol monobutyl ether:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

N-Methylpyrrolidone:

Genotoxicity in vitro : Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Result: negative

Test Type: Chinese hamster
Application Route: Oral
Result: negative

Benzenesulfonic acid, C10-16-alkyl derivs.:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Trisodium nitrilotriacetate:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male)
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Suspected of causing cancer.

Components:

Trisodium nitrilotriacetate:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

IARC Group 2B: Possibly carcinogenic to humans

Trisodium nitrilotriacetate 5064-31-3

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

N-Methylpyrrolidone:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure

Not classified based on available information.

Components:

N-Methylpyrrolidone:

Exposure routes: Inhalation
Target Organs: Nose
Assessment: May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Components:

Tetrasodium EDTA:

Exposure routes: Inhalation

Target Organs: Respiratory Tract
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity

Components:

N-Methylpyrrolidone:

Species: Rat
NOAEL: 169 mg/kg
Application Route: Ingestion
Exposure time: N11.00322330

Species: Rat
NOAEL: 0.5 mg/l
Application Route: Inhalation
Test atmosphere: dust/mist
Exposure time: N11.00322330

Species: Rabbit
NOAEL: 826 mg/kg
Application Route: Skin contact
Exposure time: N11.00322320

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with all applicable local, state and federal regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

Dangerous goods descriptions (if indicated below) may not reflect quantity, end-use, or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

49 CFR
Not regulated as a dangerous good

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Potassium hydroxide	1310-58-3	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulfuric Acid	7664-93-9	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

N-Methylpyrrolidone 872-50-4 >= 1 - < 5 %

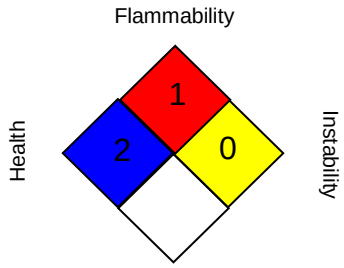
California Prop. 65
WARNING: This product can expose you to chemicals including Sulfuric Acid, which is/are known to the State of California to cause cancer, and N-Methylpyrrolidone, Sulfur dioxide, which is/are

known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



Special hazard.

Revision Date : 09/07/2018

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