



SAFETY DATA SHEET

HYPERSPERSE* MDC772

1. Product and Company Identification

Material name **HYPERSPERSE MDC772**
 Version # 2.0
 Revision date Jan-15-2015
 Supersedes date Jul-11-2012
 Chemical description Phosphonate in water
 CAS # Mixture
 Product application Membrane Deposit Control Agent

Company/undertaking identification

GE Betz, Inc.
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Emergency telephone

(800) 877 1940

2. Hazards Identification

Emergency overview Causes skin irritation. Causes serious eye irritation. May cause irritation to the respiratory system.

Potential health effects

Eyes Risk of serious damage to eyes.
Skin Causes skin irritation.
Inhalation Prolonged inhalation may be harmful.
Ingestion May cause slight gastrointestinal irritation.

3. Composition / Information on Ingredients

| Hazardous components | CAS # | Percent |
|---------------------------------------------------------|------------|---------|
| Phosphonic acid, (1-hydroxyethylidene)bis-, sodium salt | 29329-71-3 | 10 - 20 |
| Non-hazardous components | CAS # | |
| Water | 7732-18-5 | |
| Sodium diethylenetriamine penta(methylenephosphonate) | 22042-96-2 | |

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

4. First Aid Measures

First aid procedures

Inhalation 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.
Skin contact Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

| | |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. |
| Notes to physician | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |

5. Fire Fighting Measures

| | |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extinguishing media | |
| Suitable extinguishing media | Carbon dioxide, dry chemicals, foam, water spray (fog). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Protection of firefighters | |
| Protective equipment and precautions for firefighters | Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. |
| Fire fighting equipment/instructions | In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. |

6. Accidental Release Measures

| | |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS. |
| Environmental precautions | Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements. |
| Methods for cleaning up | Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS. |

7. Handling and Storage

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handling | Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. |
| Storage | Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the MSDS). Store in accordance with local/regional/national/international regulation. |

8. Exposure Controls / Personal Protection

| | |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Engineering controls | 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. |
| Personal protective equipment | |
| Eye / face protection | Wear safety glasses with side shields (or goggles). |
| Skin protection | Wear appropriate chemical resistant clothing. Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present. |
| Respiratory protection | Chemical respirator with organic vapor cartridge and full facepiece. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. |

General hygiene considerations

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 & Chemical Properties

Appearance

| | |
|------------------------------------------------|-----------------------------|
| Physical state | Liquid |
| Color | Amber |
| Odor | Slight |
| Odor threshold | Not available. |
| pH (concentrated product) | 2.5 |
| pH in aqueous solution | 2.9 (5% SOL.) |
| Vapor pressure | 18 mm Hg |
| Vapor pressure temp. | 70 °F (21 °C) |
| Vapor density | < 1 (Air = 1) |
| Boiling point | 220 °F (104 °C) |
| Melting point/Freezing point | 19 °F (-7 °C) |
| Solubility (water) | 100 % |
| Specific gravity (70°F, 21°C) | 1.2 |
| Flash point | > 212 °F (> 100 °C) P-M(CC) |
| Flammability limits in air, upper, % by volume | Not available. |
| Flammability limits in air, lower, % by volume | Not available. |
| Auto-ignition temperature | Not available. |
| Evaporation rate | < 1 (Ether = 1) |
| Viscosity | 4 cps |
| Viscosity temperature | 70 °F (21 °C) |
| Percent volatile | 0 (Estimated) |
| Pour point | 24 °F (-4 °C) |

10. Chemical Stability & Reactivity Information

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Conditions to avoid | Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | Oxides of carbon, nitrogen and phosphorus evolved in fire. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |

11. Toxicological Information

Toxicological data

| Product | Species | Test Results |
|----------------------------------|---------|---------------------------------------------------------------------|
| HYPERSPERSE MDC772 (CAS Mixture) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LC50 | Rabbit | > 5000 mg/kg, (Estimated based on chemical structure consideration) |
| <i>Oral</i> | | |
| LC50 | Rat | > 5000 mg/kg, (Estimated based on chemical structure consideration) |

| Components | Species | Test Results |
|--------------------------------------------------------------------------|---------|--------------|
| Phosphonic acid, (1-hydroxyethylidene)bis-, sodium salt (CAS 29329-71-3) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | > 5000 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 1340 mg/kg |

Carcinogenicity

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

12. Ecological Information

Ecotoxicity

| Product | Species | Test Results |
|----------------------------------|----------------|------------------------------------------------------------|
| HYPERSPERSE MDC772 (CAS Mixture) | | |
| LC50 | Fathead Minnow | 5944 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
| NOEL | Fathead Minnow | 4000 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
| Aquatic | | |
| <i>Crustacea</i> | | |
| LC50 | Daphnia magna | 2205 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted) |
| NOEL | Daphnia magna | 1000 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted) |
| <i>Fish</i> | | |
| LC50 | Rainbow Trout | 5656 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
| NOEL | Rainbow Trout | 4000 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |

Persistence and degradability

No data available

13. Disposal Considerations

Waste codes

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal instructions

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.

Waste from residues / unused products

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

Contaminated packaging

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

14. Transport Information

DOT

Not regulated as dangerous goods.

Some containers may be DOT exempt, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as a dangerous good.

15. Regulatory Information

US federal regulations

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

None listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity, lbs

None listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|-----------------------------------------------|------------------------|
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply 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).

State regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Formaldehyde (CAS 50-00-0) Listed: January 1, 1988 Carcinogenic.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

16. Other Information

List of abbreviations

IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
CAS: Chemical Abstract Service Registration Number
NFPA: National Fire Protection Association
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0
Personal protection: B

NFPA ratings

Health: 1
Flammability: 1
Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This data sheet contains changes from the previous version in section(s):

Product and Company Identification: Commercial Names
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Ecological Information: Ecotoxicity
Transport Information: Material Transportation Information
Regulatory Information: Safety Phrases
HazReg Data: Europe - EU
GHS: Classification

Prepared by

This MSDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

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