MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-Hour Emergency Phone Number: 989-636-4400

Product: DOWEX* MARATHON* MR-3 Mixed Ion Exchange Resin

Product Code: 63445

Effective Date: 03/06/02     Date Printed: 06/16/04     MSD: 003607

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Sulfonated copolymer of styrene and divinylbenzene in the hydrogen form CAS# 069011-20-7 10-30%
Trimethylamine functionalized, chloromethylated copolymer of styrene and divinylbenzene in the hydroxide form CAS# 069011-18-3 10-30%
Water CAS# 007732-18-5 40-70%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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* White to dark amber solid beads. Odorless to amine odor. Causes *
* eye irritation. Toxic fumes may be released in fire situations. *
* Slipping hazard. *
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POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause severe eye irritation. May cause moderate corneal injury. Effects are likely to heal.

SKIN: Prolonged or repeated contact may cause skin irritation.
May cause more severe response if skin is abraded (scratched or cut). No adverse effects anticipated by skin absorption.

INGESTION: Low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

INHALATION: Vapors are unlikely due to physical properties.

(Continued on page 2, over)
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4. FIRST AID

EYE: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

SKIN: Wash skin with plenty of water.

INGESTION: No emergency treatment necessary.

INHALATION: No emergency treatment necessary.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical conditions of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: Not applicable
METHOD USED: Not applicable
AUTOIGNITION TEMPERATURE:

FLAMMABILITY LIMITS
LFL: Not applicable
UFL: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to sulfur oxides, organic sulfonates, organic amines, nitrogen oxides, hydrogen chloride, benzene compounds, hydrocarbons, carbon monoxide, carbon dioxide.

OTHER FLAMMABILITY INFORMATION: This material will not burn
until the water has evaporated. Residue can burn.

EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Avoid contact with eyes and skin. Pellets or beads may present a slipping hazard.

PROTECT THE ENVIRONMENT: Material is heavier than water and has limited water solubility. It will collect on the lowest surface.

CLEANUP: Clean up floor areas. Sweep up.

7. HANDLING AND STORAGE

HANDLING: Refer to "Exposure Controls/Personal Protection", Section 8, of the MSDS.

STORAGE: Keep containers tightly closed when not in use. Store between 35-80°F (2-27°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could
occur. If hands are cut or scratched, use gloves impervious to this material even for brief exposures.

RESPIRATORY PROTECTION: No respiratory protection should be needed.

EXPOSURE GUIDELINES: None established.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: White to dark amber solid (beads).
ODOR: Odorless to amine.
VAPOR PRESSURE: Not applicable.
VAPOR DENSITY: Not applicable.
BOILING POINT: Not applicable.
SOLUBILITY IN WATER/MISCIBILITY: Insoluble.
SPECIFIC GRAVITY OR DENSITY: Density 45 lb/ft3

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions. See Storage, Section 7.

CONDITIONS TO AVOID: Product can decompose at elevated temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials. Oxidizing agents such as nitric acid attack organic exchange resins under certain conditions. Before using strong oxidizing agents, consult sources knowledgeable in handling such materials. The severity of the reaction with oxidizing materials can vary from slight degradation to an explosive reaction.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Hazardous decomposition products may include and are not limited to chlorinated hydrocarbons, aromatic compounds, hydrocarbons, hydrogen chloride, organic amines, organic sulfonates, sulfur oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

(Continued on page 5)

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INGESTION: Single dose oral LD50 has not been determined.

MUTAGENICITY: No relevant information found.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: No bioconcentration of the polymeric component is expected because of its high molecular weight. In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material will sink and remain in the sediment.

DEGRADATION & PERSISTENCE: Based largely or completely on information for polymeric component. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

ECOTOXICITY: Not expected to be acutely toxic, but pellets may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: incinerator or other thermal destruction device, landfill.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or

(Continued on page 6 , over)

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manage chemicals or plastics, and that manage used drums.
Telephone Dow's Customer Information Center at
800-258-2436 or 989-832-1556 for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.): This product is not regu-
lated by D.O.T. when shipped domestically by land.

CANADIAN TDG INFORMATION: This product is not regulated by TDG
when shipped domestically by land.

15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected
regulations represented)

NOTICE: The information herein is presented in good faith and
believed to be accurate as of the effective date shown above. However,
no warranty, express or implied is given. Regulatory requirements
are subject to change and may differ from one location to another;
it is the buyer's responsibility to ensure that its activities comply
with federal, state or provincial, and local laws. The following
specific information is made for the purpose of complying with
numerous federal, state or provincial, and local laws and regulations.
See other sections for health and safety information.

U.S. REGULATIONS

SARA HAZARD CATEGORY: This product has been reviewed according to the
EPA "Hazard Categories" promulgated under Sections 311 and 312 of the
Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and
is considered, under applicable definitions, to meet the following
categories:

An immediate health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be
listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: This product is not known to contain any

(Continued on page 7)

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REGULATORY INFORMATION (CONTINUED)

substances subject to the disclosure requirements of

New Jersey
Pennsylvania

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OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS
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WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D2B - eye or skin irritant
    Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.
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CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
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HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:                  CAS #         AMOUNT(%w/w)
SULFONATED COPOLYMER OF STYRENE AND DIVINYLBENZENE IN THE HYDROGEN FORM 069011-20-7 10-30%
TRIMETHYLEAMINE FUNCTIONALIZED, CHLOROMETHYLATED COPOLYMER OF STYRENE AND DIVINYLBENZENE IN THE HYDROGEN FORM 069011-18-3 10-30%

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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

All substances in this product are listed on the Canadian Domestic (Continued on page 8 , over)

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REGULATORY INFORMATION (CONTINUED)

Substances List (DSL) or are not required to be listed.

16. OTHER INFORMATION

MSDS STATUS: Revised Sections 3, 4, 5, 9, 10 and 12.