

SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Name: HyperDrill™ CP 911
Type of Product: Mixture
Identified Uses: Drilling Fluid Additive
Uses Advised Against: None
Supplier: Bri-Chem Supply Ltd.
27075 Acheson Road
Acheson, AB T7X 6B1
Phone Number: 780-962-9490
Emergency Telephone: CHEMTREC 1-800-424-9300 24/7

Section 2: HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture

Classification According to Part 2 of Hazardous Products Regulations: Not classified

Label Elements

Labelling According to Part 3 of Hazardous Products Regulations

Hazard Symbol(s): None

Signal Word: None

Hazard Statement(s): None

Precautionary Statement(s): None

Other Hazards: Aqueous solutions or powders that become wet render surfaces extremely slippery. For explanation of abbreviations see Section 16.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substances: Not applicable, this product is a mixture.

Mixtures

Hazardous Components

Adipic Acid

Concentration Range: <= 2.5%

CAS Number: 124-04-9

Classification According to Part 2 of Hazardous Products Regulations: Eye Irrit. 2A;H319

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Sulfamic Acid

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|---|---|
| Concentration Range: | <= 2.5% |
| CAS Number: | 5329-14-6 |
| Classification According to Part 2 of Hazardous Products Regulations: | Skin Irrit. 2;H315, Eye Irrit. 2A;H319 |
| | For explanation of abbreviations see Section 16 |

Section 4: FIRST-AID MEASURES

Description of First-Aid Measures

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| Inhalation: | Move to fresh air. Get medical attention if symptoms occur. |
| Skin Contact: | Wash off with soap and plenty of water. Get medical attention if irritation develops and persists. |
| Eye Contact: | Rinse immediately with plenty of water, also under the eyelids. Get medical attention. |
| Ingestion: | Rinse mouth. If conscious, give the victim plenty of water to drink. Induce vomiting, but only if victim is fully conscious. |
| Most Important Symptoms/Effects, Acute and Delayed: | Powder can cause localized skin irritation in folds of the skin or under tight clothing. Contact with dust can cause mechanical irritation or drying of the skin. |
| Indication of Any Immediate Medical Attention and Special Treatment Needed: | None |
| Other Information: | No information available |

Section 5: FIRE-FIGHTING MEASURES

Extinguishing Media

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| Suitable Extinguishing Media: | Water. Water spray. Foam. Carbon dioxide (CO ₂). Dry powder. Warning! Aqueous solutions or powders that become wet render surfaces extremely slippery. |
| Unsuitable Extinguishing Media: | None known |

Special Hazards Arising from The Substance or Mixture

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| Hazardous Decomposition Products: | Thermal decomposition may produce hydrogen chloride gas, nitrogen oxides (NO _x), carbon oxides (CO _x), ammonia (NH ₃), hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere. |
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Advice for Firefighters

Protective Measures: Wear self-contained breathing apparatus for fire fighting if necessary.

Other Information: Aqueous solutions or powders that become wet render surfaces extremely slippery.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Personal Precautions: Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust. Aqueous solutions or powders that become wet render surfaces extremely slippery.

Protective Equipment: Wear adequate personal protective equipment (see Section 8 Exposure Controls/Personal Protection)

Emergency Procedures: Keep people away from spill/leak. Prevent further leakage or spillage if safe to do so.

Environmental Precautions: As with all chemical products, do not flush into surface water.

Methods and Materials for Containment and Cleaning Up

Small Spills: Do not flush with water. Clean up promptly by sweeping or vacuum.

Large Spills: Do not flush with water. Prevent unauthorized access. Sweep up and shovel into suitable containers for disposal.

Residues: Sweep up to prevent slip hazard. After cleaning, flush away traces with water.

Reference to Other Sections: Section 7: Handling and storage; Section 8: Exposure controls/personal protection; Section 13: Disposal considerations.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust. Wash hands before breaks and at the end of the workday.

Conditions for Safe Storage, Including any Incompatibilities: Keep in a dry place. Incompatible with oxidizing agents.

Specific End Use(s) This information is not available

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Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits

Adipic Acid: 5 mg/m³ (8 hours); 10 mg/m³ (15 minutes)

Exposure Controls

Appropriate Engineering Controls: Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

Individual Protection Measures, Such as Personal Protective Equipment

Eye/Face Protection: Safety glasses with side-shields. Do not wear contact lenses where this product is used. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin Protection
Hand Protection: PVC or other plastic material gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

Other: Chemical resistant apron or protective suit if splashing or repeated contact with solution is likely. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Dust safety masks recommended where working powder concentration is more than 10mg/m³. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Additional Advice: Wash hands before breaks and at the end of workday. Wash hands immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls: Do not allow uncontrolled discharge of product into the environment.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Granular solid, White

Odour: None

Odour Threshold: Not applicable

pH: 2.5 – 4.5 @ 5 g/L (See Technical Bulletin or Product Specifications for a more precise value, if available)

Melting Point/Freezing Point: > 100°C

Initial Boiling Point and Boiling Range: Not applicable

Flash Point: Not applicable

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| Evaporation Rate: | Not applicable |
| Flammability (Solid, Gas): | Not combustible |
| Upper/Lower Flammability or Explosive Limits: | Not expected to create to create explosive atmospheres |
| Vapor Pressure: | Not applicable |
| Vapor Density: | Not applicable |
| Relative Density: | 0.6 – 0.9 (See Technical Bulletin or Product Specifications for a more precise value, if available) |
| Solubility(ies): | Soluble in water |
| Partition Coefficient n-octanol/water (log value): | < 0 |
| Autoignition Temperature: | Not applicable |
| Decomposition Temperature: | > 200°C |
| Viscosity: | See Technical Bulletin |
| Explosive Properties: | Not expected to be explosive based on the chemical structure. |
| Oxidizing Properties: | Not expected to be oxidizing based on the chemical structure. |
| Other Information: | None |

Section 10: STABILITY AND REACTIVITY

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| Reactivity: | Hazardous polymerisation does not occur. |
| Chemical Stability: | Stable |
| Possibility of Hazardous Reactions: | Oxidizing agents may cause exothermic reactions. |
| Conditions to Avoid: | None known |
| Incompatible Materials: | Oxidizing agents. |
| Hazardous Decomposition Products: | Thermal decomposition may produce hydrogen chloride gas, nitrogen oxides (NO _x), carbon oxides (CO _x), ammonia (NH ₃), hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere. |

Section 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Information on the Product Supplied

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| Acute Oral Toxicity: | LD 50/oral/rat > 5000 mg/kg |
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| Acute Dermal Toxicity: | LD 50/dermal/rat > 5000 mg/kg |
| Acute Inhalation Toxicity: | The product is not expected to be toxic by inhalation. |
| Skin Corrosion/Irritation: | Not irritating |
| Serious Eye Damage/ Eye Irritation: | Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those which all granular materials have on conjunctivae. |
| Respiratory/Skin Sensitization: | The results of testing on guinea pigs showed this material to be non-sensitizing. |
| Mutagenicity: | Not mutagenic |
| Carcinogenicity: | Not carcinogenic |
| Reproductive Toxicity: | Not toxic for reproduction |
| STOT – Single Exposure: | No known effects |
| STOT – Repeated Exposure: | No known effect |
| Aspiration Hazard: | No hazards resulting from the material as supplied. |

Relevant Information on the Hazardous Components

Adipic Acid

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|---|--|
| Acute Oral Toxicity: | LD50/oral/rat = 5560 mg/kg (OECD 401) |
| Acute Dermal Toxicity: | LD0/dermal/rabbit >= 3176 mg/kg |
| Acute Inhalation Toxicity: | LC0/inhalation/4 hours/rat > 7.7 mg/L (OECD 403) |
| Skin Corrosion/Irritation: | Slightly irritating |
| Serious Eye Damage/Eye Irritation: | Not irritating (OECD 405) (SNF) |
| Respiratory/Skin Sensitization: | Not sensitizing |
| Mutagenicity: | Negative in the Ames Test (OECD 471). Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476). |
| Carcinogenicity: | Carcinogenicity study in rat: NOAEL > 750 mg/kg/day |
| Reproductive Toxicity: | NOAEL/Maternal toxicity/rat >= 288mg/kg/day NOAEL/Developmental toxicity/rat >= 288 mg/kg/day |
| STOT – Single Exposure: | No known effects |
| STOT – Repeated Exposure: | No known effects |
| Aspiration Hazard: | No known effects |

Sulfamic Acid

| | |
|-----------------------------------|--|
| Acute Oral Toxicity: | LD50/oral/rat = 2065 – 2140 mg/kg |
| Acute Dermal Toxicity: | NOAEL/dermal/rat = 2000 mg/kg (OECD 402) |
| Acute Inhalation Toxicity: | The product is not expected to be toxic by inhalation. |

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| Skin Corrosion/Irritation: | Not irritating (OECD 404) (SNF) |
| Serious Eye Damage/Eye Irritation: | Moderately irritating to the eyes. (EPA OPPTS 870.2400) |
| Respiratory/Skin Sensitization: | This product is not expected to be sensitizing. |
| Mutagenicity: | Negative in the Ames Test (OECD 471). Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476). Not mutagenic. (OEC 472,487). |
| Carcinogenicity: | Based on the absence of mutagenicity, it is unlikely that the substance is carcinogenic. |
| Reproductive Toxicity: | Prenatal Development Toxicity Study (OECD 414) NOAEL/Maternal toxicity/rat = 200 mg/kg/day NOAEL/Developmental toxicity/rat = 200 mg/kg/day |
| STOT – Single Exposure: | No known effects |
| STOT – Repeated Exposure: | No known effects |
| Aspiration Hazard: | No known effects |

Section 12: ECOLOGICAL INFORMATION

Toxicity

Information on The Product as Supplied

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| Acute Toxicity to Fish: | LC50/Danio Rerio/96 hours > 5 -10 mg/L (OECD 203) |
| Acute Toxicity to Invertebrates: | EC50/Daphnia Magna/48 hours > 20 - 50 mg/L (OECD 202) |
| Acute Toxicity to Algae: | Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test. |
| Chronic Toxicity to Fish: | No data available |
| Chronic Toxicity to Invertebrates: | No data available |
| Toxicity to Microorganisms: | No data available |
| Effects on Terrestrial Organisms: | No data available. Readily biodegradable, exposure to soil is unlikely. |
| Sediment Toxicity: | No data available. Readily biodegradable, exposure to soil is unlikely. |

Relevant Information on the Hazardous Components

Adipic Acid

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| Acute Toxicity to Fish: | LC0/Danio rerio/96 hours >= 1000 mg/L |
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| Acute Toxicity to Invertebrates: | EC50/Daphnia magna/48 hours = 46 mg/L (OECD 202) |
| Acute Toxicity to Algae: | IC50/Selenastrum capricornutum/72 hours = 59 mg/L (OECD 201) |
| Chronic Toxicity to Fish: | No data available |
| Chronic Toxicity to Invertebrates: | NOEC/Daphnia magna/21 days = 6.3 mg/L (OECD 211) |
| Toxicity to Microorganisms: | EC50/activated sludge/3 hours = 4747 mg/L (OECD 209) |
| Effects on Terrestrial Organisms: | No data available |
| Sediment Toxicity: | No data available |
| Sulfamic Acid | |
| Acute Toxicity to Fish: | LC50/Pimephales promelas/96 hours = 70.3 mg/L (OECD 203) |
| Acute Toxicity to Invertebrates: | EC50/Daphnia magna/ 48 hours = 71.6 mg/L (OECD 202) |
| Acute Toxicity to Algae: | IC50/Scenedesmus subspicatus/72 hours = 48 mg/L (OECD 201) |
| Chronic Toxicity to Fish: | NOEC/Danio rerio/34 days \geq 60mg/L (OECD 210) |
| Chronic Toxicity to Invertebrates: | NOEC/Daphnia magna/21 days = 19 mg/L (OECD 211) |
| Toxicity to Microorganisms: | EC50/activated sludge/3 hours $>$ 200 mg/L (OECD 209) |
| Effects on Terrestrial Organisms: | No data available |
| Sediment Toxicity: | No data available |

Persistence and Degradability**Information on The Product as Supplied**

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| Degradation: | Based on degradation data of components, this product is expected to be readily (bio)degradable according to OECD criteria. |
| Hydrolysis: | At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms. |
| Photolysis: | No data available |

Relevant Information on The Hazardous Components**Adipic Acid**

| | |
|---------------------|---|
| Degradation: | Readily biodegradable. $>70\%$ / 28 days (OECD 301 D) |
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|---|--|
| Hydrolysis: | Does not hydrolyse |
| Photolysis: | Half-life (indirect photolysis): = 2.9 days |
| Sulfamic Acid | |
| Degradation: | Not relevant (inorganic). |
| Hydrolysis: | Does not hydrolyse |
| Photolysis: | No data available |
| Bioaccumulative Potential | |
| Information on The Product as Supplied: | This product is not expected to bioaccumulate. |
| Partition co-efficient (Low Pow): | < 0 |
| Bioconcentration Factor (BCF): | ~0 |
| Relevant Information on the Hazardous Components | |
| Adipic Acid | |
| Partition co-efficient (Low Pow): | 0.093 @ 25°C, pH 3.3 |
| Bioconcentration Factor (BCF): | ~0 |
| Sulfamic Acid | |
| Partition co-efficient (Low Pow): | -4.34 @ 20°C |
| Bioconcentration Factor (BCF): | ~0 |
| Mobility in Soil | |
| Information on The Product as Supplied: | No data available |
| Relevant Information on the Hazardous Components | |
| Adipic Acid | |
| Koc: | No data available |
| Sulfamic Acid | |
| Koc: | No data available |
| Other Adverse Effects: | None known |

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Section 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Waste from Residues/Unused Products: Dispose in accordance with local and national regulations. Can be landfilled or incinerated, when in compliance with local regulations.

Contaminated Packaging: Rinse empty containers with water and use the rinse-water to prepare the working solution. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled or incinerated, when in compliance with local regulations.

Recycling: In accordance with local and national regulations.

Section 14: TRANSPORT INFORMATION

Land Transport (TDG): Not classified

Sea Transport (IMDG): Not classified

Air Transport (IATA): Not classified

Section 15: REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture Information on The Product as Supplied

DSL / NDSL Chemical Substances Inventory

Canada (DSL): All components of this product are either listed on the inventory or are exempt from listing.

Section 16: OTHER INFORMATION

This Data Sheet Contains Changes from The Previous Version in Section(s): Section 3 – Composition/Information on Ingredients
Section 5 – Fire-fighting Measures
Section 8 – Exposure Controls/Personal Protection
Section 16 – Other Information

Key or Legend to Abbreviations and Acronyms Used in the Safety Data Sheet

Acronyms: STOT – Specific Target Organ Toxicity

Abbreviations: Eye Irrit 2A = Serious eye damage/eye irritation
Category Code 2A

Skin Irrit. 2 = Skin corrosion/irritation Category Code 2

Hazard Statements: H315 – Causes skin irritation
H319 – Causes serious eye irritation

Training Advice: Do not handle until all safety precautions have been read and understood.

SAFETY DATA SHEET

Disclaimer:

The information contained herein is based on data available to us and is believed to be true and accurate. However, no guarantee or warranty is provided, expressed or implied, by the company or its subsidiaries regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Since the use of this product is within the exclusive control of the user, we do not assume any responsibility and expressly disclaim any liability for any use of this product. It is the user's responsibility to determine the conditions of safe use, storage, and disposal of the product. Compliance with all applicable federal, provincial, and local regulations remains the responsibility of the user.

Prepared by: Bri-Chem Supply Ltd.

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