



MATERIAL SAFETY DATA SHEET

PRODUCT: S-235 and S-235A Cleaning Solvents

Prepared: 3 December 2008
Supersedes: 16 April 2006

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product: S-235 and S-235A Cleaning Solvents
Chemical Family: Aliphatic esters
Product Use: Cleaning solvent
Responsible Party: Chemque, Inc.
266 Hurmerline Drive
Rexdale, ON
M9W 5X1 CANADA
Telephone Number: (416) 679-5676
In Emergency Only: CANUTEC Collect: (613) 996-6666 (24-hour hotline)
Information: (613) 992-4624

SECTION 2: HAZARDS IDENTIFICATION

This product has been classified and labelled in accordance with EU directives 67/548/EEC and 1999/45/EC and their adaptations and annexes.

Emergency Overview:

Clear, colourless liquid.
Irritating to eyes and skin.

Potential Health Effects:

Eyes – Irritant. May cause tearing or blurring of vision.
Skin – Irritant. May cause discomfort and irritation.
Inhalation – Irritating to the upper respiratory tract.
Ingestion – Harmful if swallowed.
Chronic Effects – Pre-existing eye disease may be aggravated by overexposure to this material.

SECTION 3: HAZARDOUS INGREDIENT INFORMATION

| Ingredient | % (W/W) | CAS Number | EINECS # | Risk Phrases |
|------------------------|---------|------------|-----------|--------------|
| N-methyl-2-pyrrolidone | 15 – 40 | 872-50-4 | 212-828-1 | R36/38 |
| Dimethyl Glutarate | 30-60 | 1119-40-0 | 214-217-2 | R36/38 |
| Dimethyl Adipate | 10-30 | 627-93-0 | 211-020-6 | R36/38 |
| Dimethyl Succinate | 10-30 | 106-65-0 | 203-419-9 | R36/38 |

See section 15 for further information on EU classification



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SECTION 4: FIRST AID MEASURES

Eyes: Flush eyes with flowing water for at least 15 minutes. Seek medical attention if irritation persists.

Skin: Remove all affected clothing and wash before reuse. Wash skin with soap and water. If irritation develops, seek medical attention.

Inhalation: Remove to fresh air. If not breathing, administer artificial respiration; if breathing is difficult, administer oxygen. Seek medical attention.

Ingestion: Give 1-2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties: Keep away from heat, sparks and open flame.

Extinguishing Media: Water spray, foam, dry chemical, carbon dioxide.

Hazardous Combustion Products: Carbon dioxide and carbon monoxide.
Nitrogen oxides and other toxic compounds.

Protection of Fire Fighters: Self-contained breathing apparatus and full protective clothing should be worn by fire-fighters.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment as recommended in Section 8.

Environmental Precautions: Do not empty into drains or discharge into the soil/subsoil

Methods for Containment: Eliminate all ignition sources and ventilate contaminated area. Cover spill with absorbent material. Store in closed containers for disposal

Methods for Clean-Up: None needed.

SECTION 7: HANDLING AND STORAGE

General Warning to Prevent Exposure: Do not breathe fumes or vapours.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

General Storage Information: Store in tightly-sealed containers in a cool, dry, well-ventilated area.
Keep away from moisture.



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SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

| Ingredient | Exposure Limit | Unit |
|---|--------------------------------|------------------|
| N-methyl-2-pyrrolidone | N/E | --- |
| Dimethyl Glutarate/ Adipate/ Succinate | AEL (Dupont) 1.5 TWA 10 | ppm mg/m3 |

Engineering Controls:

Use local exhaust ventilation to keep vapour concentrations at low levels.

Personal Protective Equipment:

Eyes: Safety glasses or goggles; face shield if risk of splashing is present.
Skin: Chemical resistant gloves (preferably butyl rubber).
Inhalation: Where TLV is exceeded, use a NIOSH-approved organic respirator.

Other: Safety shower, eye bath.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Clear, colourless liquid. |
| Odour: | Sweet mild solvent odour. |
| Melting Point (°C): | N/E |
| Boiling Point (°C): | N/E |
| Flash Point (Method): | 93.5 C (200.3 F) (Setaflash Closed Cup) |
| Evaporation Rate: <small>(ethyl acetate = 1)</small> | N/E |
| Upper/Lower Flammable Limits: | N/E |
| Vapour Pressure @ 25°C: | 0.2 mm Hg (calculated) |
| Vapour Density: | N/E |
| Specific Gravity @ 25°C: | 1.09 |
| Solubility: | N/E |
| VOC content: | 100% |

SECTION 10: STABILITY AND REACTIVITY

| | |
|-------------------------------------|--|
| Chemical Stability: | Stable under normal conditions. |
| Conditions to Avoid: | Excessive heat |
| Incompatible Materials: | Strong oxidants, acids, bases. |
| Hazardous Decomposition Products: | Carbon dioxide and carbon monoxide. Possible nitrogen oxides. |
| Possibility of Hazardous Reactions: | Will not occur |



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SECTION 11: TOXICOLOGICAL INFORMATION

| | | |
|--------------------------------|--|--|
| Acute Dose Toxicity: | N-methyl-2-pyrrolidone | Dermal, LD ₅₀ : > 4000 mg/kg (rabbit) Oral, LD ₅₀ : 5270 mg/kg (rat) Inhalation, LC ₅₀ : 5.1 mg/l/4hr (rat) |
| Repeated Dose Toxicity: | Dimethyl Glutarate/ Adipate/ Succinate | Dermal, LD ₅₀ : 2250 mg/kg (rabbit) Oral, LD ₅₀ : 8191 mg/kg (rat) |
| Sensitization: | N/E | |
| Carcinogenicity: | Not a known sensitizer. | |
| Neurological Effects: | Not a known carcinogen. | |
| Genetic Effects: | N/E | |
| Reproductive Effects: | N/E | |
| Developmental Effects: | Animal studies have shown that N-methyl-2-pyrrolidone may adversely affect the developing fetus. | |
| Target Organ Effects: | <u>Eyes</u> – Pre-existing eye disease may be aggravated by overexposure to this material. | |

SECTION 12: ECOLOGICAL INFORMATION

Biodegradability: Material is readily biodegradable.

SECTION 13: DISPOSAL CONSIDERATIONS

Recover or recycle if possible.

Dispose of this material in accordance with local, provincial and federal laws and regulations.

All provided information only applies to the material as supplied to the user. The characteristics outlined may not apply if the material has been used or otherwise contaminated. It is the responsibility of the user to determine the proper waste identification and disposal methods in compliance with applicable regulations.

SECTION 14: TRANSPORT INFORMATION

NOT REGULATED FOR TRANSPORT



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SECTION 15: REGULATORY INFORMATION

Canadian Regulations:

As per WHMIS, this material is classified:

D2A ("Poisonous Material Causing Serious and Toxic Effects") – Very Toxic

D2B ("Poisonous Material Causing Serious and Toxic Effects") - Toxic

All of the components of this material appear on the "Domestic Substances List".

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all of the information required in the *Controlled Products Regulations*.

This material is classified as hazardous under OSHA regulation 29 CFR 1910.1200.

SARA Title III: This product contains the following chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372:

N-methyl-2-pyrrolidone, CAS #872-50-4.

CA Prop. 65: Contains a chemical known to the state of California to cause birth defects or other reproductive harm:

N-methyl-2-pyrrolidone, CAS #872-50-4.

All of the components of this material appear on the "Toxic Substances Control Act" (TSCA) inventory.

EU Regulations

Name of material: S-235 and S-235A Solvents

Country of Origin: Canada

Hazards : **Xi** - Irritating

R36/38: Irritating to eyes and skin

(S2): Keep out of the reach of children

S41: In case of fire and/or explosion do not breathe fumes

This product has been classified and labelled in accordance with EU directives 67/548/EEC and 1999/45/EC and their adaptations and annexes

SECTION 16: OTHER INFORMATION

Risk Phrases:

R36/38: Irritating to eyes and skin

Abbreviations:

N/E Not established

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested method of application and recommendations are beyond our control. Therefore it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done at Chemque. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases Chemque from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind Chemque. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

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S-235A

PURGING SOLVENT FOR POLYURETHANE EQUIPMENT

INTRODUCTION

S-235A Purging Solvent is low toxicity, environmentally friendly solvent for purging the mixing heads and static mixers of polyurethane processing equipment. S-235A is an effective replacement for methylene chloride. It does not contain chlorinated solvents. S-235A is biodegradable and non flammable.

S-235A should be used with Teflon, EPDM or silicone seals. It will attack viton and rubber seals.

FEATURES AND BENEFITS OF S-235A PURGING SOLVENT

1. S-235A is a "safe" solvent when appropriate handling precautions are observed.
2. S-235A has low vapor pressure. It reduces the VOC's emitted into the atmosphere.
3. S-235A has a high flash point and does not present a fire hazard.
4. S-235A and S-235A solvent waste are not considered "hazardous chemicals" by OSHA, EPA, DOT, and State Regulatory agencies.
5. S-235A has been specifically formulated to clean Chem-Cast gasketing resins in meter-mix dispensing equipment. When S-235A is used, more shots between rinses will be obtained.

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S-235A

| PROPERTIES | |
|---------------------------|------------------------|
| Appearance | Colorless, Clear Fluid |
| Odor | Sweet, Mild |
| Boiling Range | 383 - 437°F |
| Freezing Point | - 4°F |
| Specific Gravity @ 77°F | 1.09 |
| Flash Point, TCC | 212°F |
| Auto Ignition Temperature | 698°F |

WE RECYCLE! Ask us about our S-235A Recycling Program.

PACKAGING

1 Gallon Can
5 Gallon Can
55 Gallon Drum

SAFETY AND HANDLING PRECAUTIONS

Please refer to the Material Safety Data Sheet for S-235A Purging Solvent.

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested method of application and recommendations are beyond our control. Therefore it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done at Chemque. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases Chemque from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind Chemque. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

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