Section 1 - Product and Company Information

Product Name                  POLYVINYLPYRROLIDONE AV. MOL. WT. 40,000
Product Number               PVP40
Brand                        SIAL
Company                      Sigma-Aldrich Canada, Ltd
Address                      2149 Winston Park Drive
                             Oakville ON L6H 6J8 CA
Technical Phone:             9058299500
Fax:                         9058299292
Emergency Phone:             800-424-9300

Section 2 - Composition/Information on Ingredient

Substance Name   POLYVINYL POLYPYRROLIDONE
CAS #            9003-39-8
SARA 313         No

Formula         (C6H9NO)x
Synonyms        Agent AT 717 * Agrimer * Albigen A * Aldacol Q *
                AT 717 * Bolinan * 1-Ethenyl-2-pyrrolidinone polymers * Ganex P 804 * Hemodesis * Hemodez *
                K15 * K25 * K25 (polymer) * K30 * K30 (polymer) *
                K60 * K60 (polymer) * K90 * K115 * K115 (polyamide) *
                Kollidon * Kollidon 17 * Kollidon 25 * Kollidon 30 *
                Luviskol * Luviskol K30 *
                MPK 90 * NCI C60582 * Neocompensan *
                Peragal ST * Peregast ST * Periston *
                Periston-N *
                Plasticone *
                Plasdone K 29-32 * Plasdone XL * Plasmosan *
                Polyclar AT * Polyclar H * Polyclar L *
                Poly(1-(2-oxo-1-pyrrolidinyl)ethylene) *
                Polyidone *
                Poly(n-vinylbutyrolactam) *
                Poly(vinylpyrrollidinone) *
                Poly(N-vinylpyrrollidinone) *
                Poly(1-vinylpyrrollidinone) *
                Polyvinylpyrrollidone *
                Povidone *
                Povidone (usp xix) *
                Protagent *
                PVP *
                PVP 40 *
                PVP-K 15 *
                PVP-K 30 *
                PVP-K 60 *
                PVP-K 90 *
                PVPP *
                2-Pyrrolidinone, 1-ethenyl, homopolymer *
                2-Pyrrolidinone, 1-vinyl-*, polymers *
                143 RP *
                Subtosan *
                Vinisil *
                N-Vinylbutyrolactam polymer *
                Vinylpyrrollidinone polymer *

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Caution: Avoid contact and inhalation.

HMIS RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

SIGMA-ALDRICH
MATERIAL SAFETY DATA SHEET

Date Printed: 08/13/2007
Date Updated: 02/09/2007
Version 1.0
NFPA RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid inhalation. Avoid contact with eyes, skin,
and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS
Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.
Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
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</tr>
<tr>
<td>Color</td>
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<td>Form</td>
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<tr>
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<tr>
<td>pH</td>
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<td>MP/MP Range</td>
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<td>Vapor Pressure</td>
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<tr>
<td>Solubility</td>
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</table>
Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

SENSITIZATION
Sensitization: Will not occur

SIGNS AND SYMPTOMS OF EXPOSURE
Unexcreted particles may be phagocytized by cells of the reticuloendothelial system and deposited in storage sites in the liver, spleen, lung, and bone marrow resulting in the storage disease thesaurosis. Severity and symptoms depend on storage site and nature of the particle. Pathological changes are not necessarily attributed to the thesaurosis, but in some cases an inflammation or granulomatoma have occurred.

TOXICITY DATA

Oral
Rat
100000 mg/kg
LD50
Remarks: Gastrointestinal: Hypermotility, diarrhea.

Oral
Mouse
> 40000 mg/kg
LD50

Intraperitoneal
Mouse
12 GM/KG
LD50
Guinea pig
100000 mg/kg
LD50
Remarks: Gastrointestinal: Hypermotility, diarrhea.

IRRITATION DATA
Eyes
Rabbit
Remarks: No irritation effect
Skin
Rabbit
Remarks: No irritation effect

CHRONIC EXPOSURE - CARCINOGEN
Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC CARCINOGEN LIST
Rating: Group 3

Section 12 - Ecological Information
No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
S: 22-24/25
Safety Statements: Do not breathe dust. Avoid contact with skin and eyes.

US CLASSIFICATION AND LABEL TEXT
US Statements: Caution: Avoid contact and inhalation.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in
accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.