

## MATERIAL SAFETY DATA SHEET

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Re-Systems Group PVAL Film  
Product Description: Water Soluble PVAL Film

Supplier's details: Re-Systems Group, USA  
430 Oak Grove St. STE 410  
Minneapolis, MN 55403  
612.872.1900 (Mon.-Fri., 8:00a.m.-5:00p.m. Central Time)  
612.872.1902 FAX

Revision Date: March 6, 2009  
Name of Preparer: Eric Henjum

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### 2. PRODUCT INGREDIENTS

Ingredient	CAS. No.	Percent	GHS Hazardous
Polyvinyl alcohol	25213-24-5	>70.0%	Not Classified
Glycerin	56-81-5	<20.0%	Not Classified
Starch and other Additives	-	<15.0%	Not Classified

In addition to the above composition, 1-15% water is included

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### 3. HAZARDS IDENTIFICATION

GHS Classification: Not classified  
GHS label elements: Not applicable  
Other Hazards which do not result in classification:  
Decomposes at above 200<sup>0</sup>C. Produces fumes when decomposing due to heat

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### 4. FIRST AID MEASURES

Inhalation:

If large amounts of the gas released from hot decomposing film are inhaled, move victim to fresh air. If recovery is difficult, coughing persists, or serious difficulty in breathing is experienced, seek medical treatment.

Skin:

If hot melted material comes in contact with skin, flush with large quantities of water and fully cool affected area. Do not attempt to forcibly remove hot polymer and clothes. Seek Medical treatment at once

Eye:

Flush with clean water. If any foreign substance remains in the eyes, seek medical treatment at once to avoid possibility of inflammation.

Ingestion:

Spit out as much as possible, and if there is irritation and material sticking in the throat, seek medical treatment

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#### 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Water spray, powder, carbon dioxide and foam agents are appropriate.

Specific hazards arising from the chemical:

Material produces toxic fumes of carbon monoxide when decomposing or burning.

Method of fire fighting:

Prevent entry into area where the outbreak of fire has occurred. Wear suitable protective equipment for fire fighting as black smoke and monoxide gas are generated by heat and incomplete combustion. Quickly relocate movable containers to a safe place.

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#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Be sure to collect any films on the floor since there is a danger of slipping.

Environmental precautions:

Since fish, birds etc. may ingest film, and it may have adverse environmental effects, keep away from drains, surface and ground water

Clean up method:

Gather up, by sweeping or vacuuming and dispose.

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#### 7. HANDLING AND STORAGE

Handling:

Be cautious of dropping the material.

Storage:

Avoid direct sunlight, water leakage, high temperatures, high humidity and outdoor storage to prevent varying quality and foreign matter getting mixed into the material. Keep away from fire and heat sources.

General hygiene:

Eating, drinking and smoking in work areas are prohibited. Wash hands after handling the material

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#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational exposure limits: No TLV have been established in ACGIH.

Appropriate engineering controls:

Use local exhaust ventilation when heat sealing at high temperature as excessive gas is released from hot melting film.

Personal protective equipment:

Eye/face protection:

Wear safety glasses with side shields when working with this material as good safety practice.

Skin protection:

Wear protective clothing to minimize skin contact as good industrial hygiene practice.

Respiratory protection:

No special respiratory protection is normally required.

NOTE: Personal protection information is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Translucent film

Odor: There is a slight smell of PVAL

Specific gravity: 1.3

Melting point: 200<sup>0</sup>C or less

Solubility: Soluble in water

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## 10. STABILITY AND REACTIVITY

Chemical stability:

This product is stable

Conditions to avoid:

Avoid contact with oxidizers, excessive heat, sparks or open flame.

Incompatible materials:

Material may be softened and dissolved by water. Reacts with oxidizers.

Hazardous decomposition products:

Product is flammable and may produce toxic fumes of carbon monoxide if burnt

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## 11. TOXICOLOGICAL INFORMATION

Acute toxicity:

According to the GHS(Chapter3.1) and DOT(CFR173.132), the acute toxicity estimate of the product is over 10,000mg/kg

Skin, eye respiratory irritation:

The film pieces have the possibility of irritating the eyes, skin and respiratory organs.

Carcinogenicity:

According to the information presently available to the IARC, polyvinyl alcohol and glycerin is classified to the group 3L unclassifiable as to carcinogenicity to humans. There is no carcinogenic information on starch and other additives in IARC

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## 12. ECOLOGICAL INFORMATION

A large variety of microorganisms (existing freely in most environments) have been proven to degrade PVAL.

Since fish, birds, etc. may ingest and material may cause adverse effects, keep away from drains, surface and ground water.

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## 13. DISPOSAL CONSIDERATIONS

Determine the method of safe and environmentally preferred waste management consistent with the requirements of the national competent authority. Perform proper disposal, recycling or reclamation for PVAL material.

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## 14. TRANSPORT INFORMATION

Transport hazard class:

Not regulated in UN Recommendations on the Transport of Dangerous Goods.

Shipping Descriptions per regulatory authority:

US DOT

It is specifically determining that PVAL and additives are not a forbidden material and this product does not meet the definition of any hazard class.

PVAL and additives are not specified as a "Hazardous Substances and Reportable Quantities" in CFR171.101App.A.

PVAL and additives are not specified as a "Marine Pollutants" in CFR 171.101App.B.

Special precautions for user:

Confirm there is no tear in package. Handle so that there is in danger of material falling and breaking. Avoid direct sunlight, rapid temperature changes, and water leakage during transportation. Keep away from fire and heat sources.

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## 15. REGULATORY INFORMATION

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: Not to have met any hazard category.

SARA 313 Information:

To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

OSHA Status:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Status:

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

Please refer to any other national measure that may be relevant.

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## 16. OTHER INFORMATION

Abbreviations that may have been used in this document:

GHS – Globally Harmonized System of Classification and Labeling Chemicals

CAS – Chemical Abstract Service Number

TLV – Threshold Limit Value

ACGIH – American Conference of Government Industrial Hygienists

LD50 – Lethal Dose

IARC – International Agency for Research on Cancer

DOT – Department of Transportation

SARA – Superfund Amendments and Reauthorization Act

EPA – Environmental Protection Agency

OSHA – Occupational Safety & Health Administration

TSCA – Toxic Substance Control Act

This data sheet is prepared according to the GHS and ISO 11014-1

Re-Systems Group believes the information contained in this MSDS to be accurate and correct based on information provided to Re-Systems Group by raw materials suppliers. This Material Safety Data Sheet supersedes any previously dated MSDS and contains the most accurate, up-to-date information available. No Warranty of Merchantability, fitness for any particular purpose, or any other warranty, express or implied, is made as concerns the information herein provided. It is the responsibility of the user to determine the conditions of safe use for this product.