Revision Date Jul-19-2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product code **APJ59006**
Product name **PermaSeal**
Product description Ink Product

Manufacturer or supplier's details
UNITED KINGDOM
The Imaging Warehouse
1a Black Hill Industrial Estate
Warwick Road, Stratford-upon-Avon
Warwickshire, CV37 0PT
Tel: +44 1789 739200
Fax: +44 1789 731569

UNITED KINGDOM
The Imaging Warehouse
1a Black Hill Industrial Estate
Warwick Road, Stratford-upon-Avon
Warwickshire, CV37 0PT
Tel: +44 1789 739200

Emergency Telephone Number:
UK: +44 1789 739200

Website: www.permajet.com

email: sales@permajet.com

2. HAZARDS IDENTIFICATION

This product is a preparation. Health hazard information is based on its components.

Appearance Water-white
Flammable Properties EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.
Emergency Overview Irritant. May cause drowsiness and dizziness.

Eyes Moderately irritating to the eyes. The liquid splashed in the eyes may cause irritation and reversible damage.
Skin Moderate skin irritant. Prolonged skin contact may defat the skin and produce dermatitis.
Inhalation May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. Risk of serious damage to the lungs (by aspiration).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Dimethyl ether	115-10-6	30 - 60
Isopropyl alcohol	67-63-0	30 - 60
n-Butyl acetate	123-86-4	1 - 5

4. FIRST AID MEASURES

Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Skin Contact Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention.

Inhalation Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flammable Properties

EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.

Suitable Extinguishing Media

Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes. Keep product and empty container away from heat and sources of ignition. Risk of ignition.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Methods for Cleaning Up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools.

Environmental Precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Ontario TWAEV	Mexico OEL (TWA)
Isopropyl alcohol	TWA: 200 ppm STEL: 400 ppm	TWA: 400 ppm TWA: 980 mg/m^3 STEL: 1225 mg/m^3 STEL: 500 ppm	2000 ppm 10% LEL	TWA: 200 ppm STEL: 400 ppm	TWA: 400 ppm TWA: 980 mg/m^3 STEL: 1225 mg/m^3 STEL: 500 ppm
n-Butyl acetate	TWA: 150 ppm STEL: 200 ppm	TWA: 710 mg/m^3 TWA: 150 ppm STEL: 950 mg/m^3 STEL: 200 ppm	1700 ppm 10% LEL	TWA: 150 ppm TWA: 710 mg/m^3 STEL: 200 ppm STEL: 950 mg/m^3	TWA: 150 ppm TWA: 710 mg/m^3 STEL: 200 ppm STEL: 950 mg/m^3

Engineering Measures

Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal Protective Equipment

Respiratory Protection

Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter.

Eye Protection Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield.

Skin Protection Wear protective gloves/clothing. Solvent-resistant apron and boots.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Water-white	**Physical State**	Aerosol
Odor	Characteristic	**Odor Threshold**	No information available
pH	Not applicable	**Autoignition Temperature**	350°C (235°C, BAM, DIN 51 794)
Boiling point/Boiling Range	-25°C / -13°F	**Melting Point/Range**	No information available
Freezing Point/Range	No information available	**Solubility**	No information available
Evaporation Rate	No information available	**Partition Coefficient (n-octanol/water)**	No information available
Vapour Pressure	No information available	**Vapour Density**	Heavier than air
Flammability (solid, gas)	No information available		

Flammability Limits in Air
Upper No information available
Lower No information available

Flash Point -41°C / -42°F
Method No data available

Photochemically Reactive No

Weight Per Gallon (lbs/gal)	6.058	**Specific Gravity**	0.727
VOC by weight %	96.582	**VOC by volume %**	96.919
VOC lbs/gal (less water)	5.857	**VOC grams/liter (less water)**	701.806

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions.

Conditions to Avoid Heat, flames and sparks. Keep away from direct sunlight.

Incompatible Products Strong acids. Strong bases. Strong oxidizing agents. Reducing agents.

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide.

Possibility of Hazardous Reactions None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dimethyl ether			308.5 mg/L (Rat) 4 h
Isopropyl alcohol	4396 mg/kg (Rat)	12800 mg/kg (Rat) 12870 mg/kg (Rabbit)	72.6 mg/L (Rat) 4 h
n-Butyl acetate	10768 mg/kg (Rat)	17600 mg/kg (Rabbit)	390 ppm (Rat) 4 h

Chronic Toxicity
No information available

Sensitisation No information available
Mutagenic Effects No information available
Reproductive Effects No information available
Developmental Effects No information available
Teratogenicity No information available
Chronic Effects Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system.
Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

We have no quantitative data concerning the ecological effects of this product. Should not be released into the environment.

Component	Freshwater Algae	Freshwater Fish	Water Flea
Isopropyl alcohol	96 Hr EC50 Scenedesmus subspicatus: >1000 mg/L; 72 Hr EC50 Scenedesmus subspicatus: >1000 mg/L	96 Hr LC50 Pimephales promelas: 9640 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas:11130 mg/L[static]	48 Hr EC50 Daphnia magna: 13299 mg/L
n-Butyl acetate	96 Hr EC50 Scenedesmus subspicatus: 320 mg/L; 72 Hr EC50 Scenedesmus subspicatus: 674.7 mg/L	96 Hr LC50 Leuciscus idus: 62 mg/L [static]	48 Hr EC50 water flea: 44 mg/L

Persistence and Degradability No information available
Bioaccumulation No information available
Mobility in Environmental Media No information available

Component	log Pow
Dimethyl ether	-0.18
Isopropyl alcohol	0.05
n-Butyl acetate	1.81

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of contents/container in accordance with local regulation.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Consumer Commodity, ORM-D, (Aerosol)

ICAO/IATA

UN1950, Aerosols, Flammable, 2.1

IMDG/IMO

UN1950, Aerosols, Flammable, 2.1

15. REGULATORY INFORMATION

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any HAPs.

U.S. State Regulations

State Right-to-Know

Component	Minnesota	Florida	New Jersey	Pennsylvania	Massachusetts	Rhode Island
Dimethyl ether	Not Listed	Not Listed	X	X	X	X
Isopropyl alcohol	Not Listed	Not Listed	X	X	X	X
n-Butyl acetate	Not Listed	Not Listed	X	X	X	X

Canada

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

Component	WHMIS Classifications of Components
Isopropyl alcohol	B2, D2B (including 70%)
n-Butyl acetate	B2, D2B

Component	NPRI - National Pollutant Release Inventory
Dimethyl ether	Part 5 Substance Part 4 Substance
Isopropyl alcohol	Part 1, Group 1 Substance; Part 5 Substance Part 4 Substance
n-Butyl acetate	Part 4 Substance Part 5 Substance

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006
Does NOT contain a listed substance

HMIS:	Health	Flammability	Reactivity	PPE
	2*	4	0	X

16. OTHER INFORMATION

Revision Date Jul-19-2010

Revision Summary New MSDS format

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of MSDS