i.p.p.i.
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Material Safety Data Sheet

1 . Product and company identification

Product code	:	PVC Tape Inks
Product name	:	IMAGEFLEX PVC
Material uses	:	Printing.
Manufacturer	:	Image Group 2284 Speers Road Oakville, Ontario L6L 2X8 905 825-5600 905 825-8833 (fax)
Product Identification	:	UN 1210
T.D.G. Classification	:	CLASS 3 PG II
WHMIS Classification	:	B-2 / D2B
Date of revision	:	5/22/2013.

2 . Hazards identification

Physical state	:	Liquid.
Color	:	Various.
WHMIS (Classification)	:	Class B-2: Flammable liquid Class D-2B: Material causing other toxic effects (Toxic).
	:	
Emergency overview	:	WARNING ! CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, LUNGS, REPRODUCTIVE SYSTEM, LIVER, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY BE HARMFUL IF SWALLOWED.
Routes of entry		Dermal contact. Inhalation.

Potential acute health effects

Eyes	:	Irritating to eyes.
Skin	:	Irritating to skin.
Inhalation	:	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	:	Harmful if swallowed.
Carcinogenic effects	:	No known significant effects or critical hazards.
Mutagenic effects	:	No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity	:	No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	:	Pre-existing digestive disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3 . Composition/information on ingredients

Hazardous ingredients	CAS number	%
n-Propyl Alcohol	71-23-8	25 - 40
n-Propyl Acetate	109-60-4	10 - 25
Ethanol	64-17-5	10 - 25

4 . First aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.

Skin contact : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

5 . Fire-fighting measures

Flammability of the product : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Products of combustion : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
sulfur oxides
halogenated compounds
metal oxide/oxides

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Flammability (OSHA criteria) : IB

Flash point : Lowest known value: -18 to 23°C (0 to 73.4°F) (Closed cup)

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

n-Propyl Alcohol	**ACGIH TLV (United States, 1/2007).** TWA: 100 ppm 8 hour(s).
n-Propyl Acetate	**ACGIH TLV (United States, 1/2007).** STEL: 1040 mg/m³ 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 835 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s).
Ethanol	**ACGIH TLV (United States, 1/2007).** TWA: 1880 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

8 . Exposure controls/personal protection

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Various.

Taste : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Boiling/condensation point : Lowest known value: 78°C (173°F)

Melting/freezing point : May start to solidify at the following temperature: -94.59°C (-138.3°F) This is based on data for the following ingredient: n-Propyl Acetate. Weighted average: -113.37°C (-172.1°F)

Flash point : Lowest known value: -18 to 23°C (0 to 73.4°F) (Closed cup)

VOC : 64.05%

Auto-ignition temperature : Lowest known value: 370.85 to 439.85°C (699.5 to 823.7°F) (propan-1-ol).

Flammable limits : Not available.

Vapor pressure : Not available.

Density : 0.9373 g/cm^3 (7.8224 lbs/gal)

Solubility : Not available.

Viscosity : Not available.

Vapor density : Highest known value: 2.1 (Air = 1) (propan-1-ol). Weighted average: 1.67 (Air = 1)

Evaporation rate : Highest known value: 1.7 (Ethanol) Weighted average: 1.15compared with Butyl acetate.

Molecular weight : Not applicable.

Molecular formula : Not applicable.

Critical temperature : Lowest known value: 263.7°C (506.7°F) (propan-1-ol).

Volatility : Not available.

Ionicity (in water) : Not available.

9 . Physical and chemical properties

Dispersibility properties : Not available.

Physical/chemical properties comments : Not available.

10 . Stability and reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Reactivity - Light : May polymerize on exposure to light.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propan-1-ol	LD50 Dermal	Rabbit	5040 mg/kg	-
	LD50 Oral	Rat	2200 mg/kg	-
	LD50 Oral	Rat	1870 mg/kg	-
C.I. Pigment Blue 15	LD Intraperitoneal	Rat	>3 g/kg	-
	LD Oral	Rat	>15 g/kg	-
n-Propyl Acetate	LD50 Dermal	Rabbit	>20 mL/kg	-
	LD50 Oral	Rat	9370 mg/kg	-
Ethanol	LD50 Oral	Rat	7060 mg/kg	-
	LDLo Dermal	Rabbit	20 g/kg	-

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
propan-1-ol	A4	-	-	-	-	-
Ethanol	A4	-	-	-	-	-

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
propan-1-ol	-	Acute EC50 4620000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute EC50 3644000 to 3977000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 6700000 ug/L	Daphnia - Daphnia magna	48 hours

12 . Ecological information

		Fresh water		
	-	Acute LC50 6540000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 6300000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 5820000 ug/L Fresh water	Daphnia - Daphnia cucullata	48 hours
	-	Acute LC50 4630000 to 5000000 ug/L Fresh water	Fish - Pimephales promelas	96 hours
	-	Acute LC50 7820000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 4480000 to 4880000 ug/L Fresh water	Fish - Pimephales promelas	96 hours
	-	Acute LC50 3800000 ug/L Marine water	Fish - Alburnus alburnus	96 hours
	-	Acute LC50 6980000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 3100000 ug/L Fresh water	Daphnia - Daphnia pulex	48 hours
	-	Acute LC50 3000000 to 4000000 ug/L Marine water	Fish - Alburnus alburnus	96 hours
	-	Acute LC50 2950000 ug/L Fresh water	Daphnia - Daphnia pulex	48 hours
n-Propyl Acetate	Mortality	Acute LC50 60 mg/L	Fish	96 hours
Ethanol	Intoxication	Acute EC50 >100 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 9.3 mg/L	Daphnia	48 hours
	Physiology	Acute EC50 2 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 13000 mg/L	Fish	96 hours
	Mortality	Acute LC50 >100 mg/L	Fish	96 hours

Conclusion/Summary : Not available.

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available.				

Conclusion/Summary : Not available.

Octanol/water partition coefficient : Not available.

Bioconcentration factor : Not available.

Mobility : Not available.

12 . Ecological information

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
TDG Classification	UN1210	PRINTING INK	3	II		-

PG* : Packing group

15 . Regulatory information

WHMIS (Classification) : Class B-2: Flammable liquid
Class D-2B: Material causing other toxic effects (Toxic).

CANADA INVENTORY (DSL) : Not listed.

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

16 . Other information

Hazardous Material Information System (U.S.A.) :

Health	*	2
Fire hazard		3
Reactivity		0

References : Not available.

Other special considerations : Not available.

Version : **0.01**

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

16 . Other information