Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
DY-MARK SPRAY&MARK TOLUENE FREE AEROSOL FLUORESCENT COLORS

PROPER SHIPPING NAME
AEROSOLS

PRODUCT USE
■ Application is by spray atomisation from a hand held aerosol pack.
Used according to manufacturer's directions.

SUPPLIER
Company: Dy- Mark Pty Ltd
Address:
89 Formation Street
Wacol
QLD, 4076
AUS
Telephone: +61 7 3271 2222
Fax: +61 7 3271 2751

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE
None

RISK

Risk Codes	Risk Phrases
R12	■ Extremely flammable.
R20/21	■ Harmful by inhalation and in contact with skin.
R36/38	■ Irritating to eyes and skin.
R44	■ Risk of explosion if heated under confinement.
R52	■ Harmful to aquatic organisms.
R66	■ Repeated exposure may cause skin dryness and cracking.
R67	■ Vapours may cause drowsiness and dizziness.

SAFETY

Safety Codes	Safety Phrases
S36	■ Wear suitable protective clothing.
S401	■ To clean the floor and all objects contaminated by this material use water and detergent.
S13	■ Keep away from food drink and animal feeding stuffs.
S46	■ If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
S60	■ This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
xylene	1330-20-7	10-30
acetone	67-64-1	10-30
pigment and filler, non- hazardous		1-10
resin, non- hazardous		1-10
dimethyl ether	115-10-6	10-30
hydrocarbon propellant	68476-85-7.	10-30

continued...

Section 4 - FIRST AID MEASURES

SWALLOWED
■ - Avoid giving milk or oils.
- Avoid giving alcohol.
- Not considered a normal route of entry.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

EYE
■ If aerosols come in contact with the eyes:
- Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN
■ If solids or aerosol mists are deposited upon the skin:
- Flush skin and hair with running water (and soap if available).
- Remove any adhering solids with industrial skin cleansing cream.

INHALED
■ If aerosols, fumes or combustion products are inhaled:
- Remove to fresh air.
- Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN
■ Treat symptomatically.
for lower alkyl ethers:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
For acute or short term repeated exposures to acetone:
- Symptoms of acetone exposure approximate ethanol intoxication.
- About 20% is expired by the lungs and the rest is metabolised. Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.
For acute or short term repeated exposures to xylene:
- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- Pulmonary absorption is rapid with about 60-65% retained at rest.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
■ SMALL FIRE:
- Water spray, dry chemical or CO2
LARGE FIRE:
- Water spray or fog.

FIRE FIGHTING
■ FOR FIRES INVOLVING MANY GAS CYLINDERS:
- To stop the flow of gas, specifically trained personnel may inert the atmosphere to reduce oxygen levels thus allowing the capping of leaking container(s).
- Reduce the rate of flow and inject an inert gas, if possible, before completely stopping the flow to prevent flashback.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 100 metres in all directions.

FIRE/EXPLOSION HAZARD
■ - Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat or flame.
Combustion products include: carbon monoxide (CO).
Combustible. Will burn if ignited., carbon dioxide (CO2), other pyrolysis products typical of burning organic material.
Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

FIRE INCOMPATIBILITY
■ - Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM: 2YE

Personal Protective Equipment
Gas tight chemical resistant suit.

continued...

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
■ - Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

MAJOR SPILLS
■ - Remove leaking cylinders to a safe place.
- Fit vent pipes. Release pressure under safe, controlled conditions.
- DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve.
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
■ - Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

SUITABLE CONTAINER
■ - Aerosol dispenser.
- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY
■ Xylenes:
- may ignite or explode in contact with strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride
- attack some plastics, rubber and coatings.
- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- Aromatics can react exothermically with bases and with diazo compounds.
Acetone:
- may react violently with chloroform, activated charcoal, aliphatic amines, bromine, bromine trifluoride, chlorotriazine, chromic(IV) acid, chromic(VI) acid, chromium trioxide, chromyl chloride, hexachloromelamine, iodine heptafluoride, iodoform, liquid oxygen, nitrosyl chloride, nitrosyl perchlorate, nitryl perchlorate, perchloromelamine, peroxomonosulfuric acid, platinum, potassium tert-butoxide, strong acids, sulfur dichloride, trichloromelamine, xenon tetrafluoride
- reacts violently with bromoform and chloroform in the presence of alkalies or in contact with alkaline surfaces.
For alkyl aromatics:
The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by oxidation at benzylic carbon as the intermediate formed is stabilised by resonance structure of the ring.
- Ethers may react violently with strong oxidising agents and acids.
- Ethers are generally stable to water under neutral conditions and ambient temperatures. The ether function is hydrolysed by heating in the presence of halogen acids, particularly hydrogen iodide.
Ketones in this group:
- are reactive with many acids and bases liberating heat and flammable gases (e.g., H2).
- react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H2) and heat.
- The tendency of many ethers to form explosive peroxides is well documented.
- Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe.
- Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances.

STORAGE REQUIREMENTS
■ - Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can.
- Store in original containers in approved flammable liquid storage area.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³
Australia Exposure Standards	xylene (Xylene (o- , m- , p- isomers))	80	350	150	655
Australia Exposure Standards	acetone (Acetone)	500	1185	1000	2375
Australia Exposure Standards	dimethyl ether (Dimethyl ether)	400	760	500	950
Australia Exposure Standards	hydrocarbon propellant (LPG (liquified petroleum gas))	1000	1800		

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PERSONAL PROTECTION

RESPIRATOR
Type AXNO Filter of sufficient capacity

EYE
■ - Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET
■ - No special equipment needed when handling small quantities.
- OTHERWISE:

OTHER
■ No special equipment needed when handling small quantities.
OTHERWISE:
- Overalls.
- Skin cleansing cream.
- The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton.
- Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost.

ENGINEERING CONTROLS
■ General exhaust is adequate under normal conditions. If risk of overexposure exists, wear SAA approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
■ Supplied as an aerosol pack. Contents under PRESSURE.
Flammable coloured liquid; partly mixes with water.

PHYSICAL PROPERTIES
Liquid.
Gas.

Molecular Weight: Not Applicable
Melting Range (°C): Not Available
Solubility in water (g/L): Partly Miscible
pH (1% solution): Not Available
Volatile Component (%vol): Not Available
Relative Vapour Density (air=1): Not Available
Lower Explosive Limit (%): Not Available
Autoignition Temp (°C): Not Available
State: Liquid

Boiling Range (°C): Not Available
Specific Gravity (water=1): Not Available
pH (as supplied): Not Applicable
Vapour Pressure (kPa): Not Available
Evaporation Rate: Not Available
Flash Point (°C): Not Available
Upper Explosive Limit (%): Not Available
Decomposition Temp (°C): Not Available
Viscosity: Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
■ - Elevated temperatures.
- Presence of open flame.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS
ACUTE HEALTH EFFECTS
■ Harmful by inhalation and in contact with skin.
■ Irritating to eyes and skin.
■ Vapours may cause dizziness or suffocation.
■ Vapours may cause drowsiness and dizziness.

CHRONIC HEALTH EFFECTS
■ Repeated exposure may cause skin dryness and cracking.

TOXICITY AND IRRITATION
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ for acetone:
The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitiser but is a defatting agent to the skin.

XYLENE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY IRRITATION

continued...

Oral (human) LDLo: 50 mg/kg
Oral (rat) LD50: 4300 mg/kg
Inhalation (human) TCLo: 200 ppm
Inhalation (man) LCLo: 10000 ppm/6h
Inhalation (rat) LC50: 5000 ppm/4h
Oral (Human) LD: 50 mg/kg
Inhalation (Human) TCLo: 200 ppm/4h
Intraperitoneal (Rat) LD50: 2459 mg/kg
Subcutaneous (Rat) LD50: 1700 mg/kg
Oral (Mouse) LD50: 2119 mg/kg
Intraperitoneal (Mouse) LD50: 1548 mg/kg
Intravenous (Rabbit) LD: 129 mg/kg
Inhalation (Guinea) pig: LC 450 ppm/4h

Skin (rabbit):500 mg/24h Moderate
Eye (human): 200 ppm Irritant
Eye (rabbit): 87 mg Mild
Eye (rabbit): 5 mg/24h SEVERE

■ The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.
Reproductive effector in rats

ACETONE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY
Oral (man) TDLo: 2857 mg/kg
Oral (rat) LD50: 5800 mg/kg
Inhalation (human) TCLo: 500 ppm
Inhalation (man) TCLo: 12000 ppm/4 hr
Inhalation (man) TCLo: 10 mg/m³/6 hr
Inhalation (rat) LC50: 50100 mg/m³/8 hr
Dermal (rabbit) LD50: 20000 mg/kg

IRRITATION
Eye (human): 500 ppm - Irritant
Eye (rabbit): 3.95 mg - SEVERE
Eye (rabbit): 20mg/24hr - Moderate
Skin (rabbit):395mg (open) - Mild
Skin (rabbit): 500 mg/24hr - Mild

■ The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.
for acetone:
The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitiser but is a defatting agent to the skin.

DIMETHYL ETHER:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY
Inhalation (rat) LC50: 308000 mg/m³

IRRITATION
Nil Reported

HYDROCARBON PROPELLANT:
■ Not available. Refer to individual constituents.

CARCINOGEN

Xylenes	International Agency for Research on Cancer (IARC) Carcinogens	Group	3

REPROTOXIN

xylene	ILO Chemicals in the electronics industry that have toxic effects on reproduction	Reduced fertility or sterility

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms.
This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
DY- MARK SPRAY&MARK TOLUENE FREE AEROSOL FLUORESCENT COLORS		No data		
xylene		No data		
acetone		No data		
dimethyl ether		No data		
hydrocarbon propellant		No data		

continued...

Section 13 - DISPOSAL CONSIDERATIONS

■ - DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- Consult State Land Waste Management Authority for disposal.
- Discharge contents of damaged aerosol cans at an approved site.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: FLAMMABLE GAS
HAZCHEM: 2YE (ADG7)

ADG7:

Class or division:	2	Subsidiary risk:	None
UN No.:	1950	UN packing group:	None
Special provisions:	63, 190, 277, 327	Packing Instructions:	None
Notes:	None	Limited quantities:	See SP 277
Portable tanks and bulk containers - Instructions:	None	Portable tanks and bulk containers - Special provisions:	None
Packagings and IBCs - Packing instruction:	P003, LP02	Packagings and IBCs - Special packing provisions:	PP17, PP87, L2

Shipping Name:AEROSOLS

Land Transport UNDG:

Class or division:	2	Subsidiary risk:	None
UN No.:	1950	UN packing group:	None

Shipping Name:AEROSOLS

Air Transport IATA:

Maritime Transport IMDG:

IMDG Class:	2.1	IMDG Subrisk:	SP63
UN Number:	1950	Packing Group:	None
EMS Number:	F- D, S- U	Special provisions:	63 190 277 327 959
Limited Quantities:	See SP277		

Shipping Name: AEROSOLS

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: None

REGULATIONS
Regulations for ingredients

xylene (CAS: 1330-20-7) is found on the following regulatory lists;
"Australia High Volume Industrial Chemical List (HVICL)","Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix I","International Council of Chemical (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals"

acetone (CAS: 67-64-1) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Illicit Drug Reagents/Essential Chemicals - Catego "Australia National Pollutant Inventory","Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)","Australia Standard for the Uniform Schedul Poisons (SUSDP) - Appendix F (Part 3)","Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5","IMO IBC Code Chapter 18: List of products to whi apply","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","OECD Representative List of High Production Volume (HPV) Chemicals","United Nations List of Precursors an used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II"

dimethyl ether (CAS: 115-10-6) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Hazardous Substances","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of H Volume (HPV) Chemicals"

hydrocarbon propellant (CAS: 68476-85-7,68476-86-8) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","OECD Representative List of High Production Volume (HPV

No data for DY-MARK SPRAY&MARK TOLUENE FREE AEROSOL FLUORESCENT COLORS (CW: 18-3983)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
hydrocarbon propellant	68476- 85- 7, 68476- 86- 8

continued...

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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This is the end of the MSDS.