

SAFETY DATA SHEET

Orange Photochromic Ink

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MSDS158 Revision 2
Revision Date 04/26/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Orange Photochromic Ink		
Additional Names	None		
Description	Light Sensitive Color Change Ink		
Intended Use	Coating		
Company	LCR Hallcrest 1911 Pickwick Lane Glenview IL 60026 USA		
Web	www.hallcrest.com		
Telephone	+1 847 998 8580		
Fax	+1 847 998 6866		
Email	sales@hallcrest.com		
Emergency telephone number	Chemtel	Domestic:	800-255-3924
		Intl:	+01-813-248-0585

2. HAZARDS IDENTIFICATION.

GHS Classification

- Skin Corrosion/irritation – Cat 2
- Serious eye damage/eye irritation – Cat 2
- Reproductive toxicity – Cat 1B
- Specific Target Organ Toxicity (single exposure) – Cat 3
- Flammable Liquids – Cat 4

GHS Label Elements
Pictograms



Signal Word Danger

Hazard Statements

- Causes skin irritation
- Causes serious eye irritation
- May damage fertility or the unborn child
- May cause respiratory irritation
- Combustible Liquid

Precautionary Statement

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Wear eye/face protection
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 If skin irritation occurs: Get medical advice/attention
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION / INFORMATION ON INGREDIENTS.			
Ingredients	CAS-No	Weight %	Trade Secret
1-Methyl-2-Pyrrolidinone	872-50-4	60 - 80	*
Photosol Generic Dye NAEM	Not Available	5%	*

4. FIRST AID MEASURES

Description of first aid measures

General advice If symptoms persist, call a physician. Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.

Eye contact If eye irritation persists, consult a specialist. Call a physician immediately. Immediately flush eyes with large quantities of clean water for at least 15 minutes.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

Inhalation If breathing is difficult, give oxygen. Move to fresh air in case of accidental inhalation of vapours. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Immediate medical attention is required.

Ingestion

Most important symptoms and effect, both acute or delayed.

Symptoms Repeated exposure may cause skin dryness or cracking.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media Water spray. Carbon dioxide (CO2). Dry chemical.

Specific hazards arising from the chemical Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Special protective actions for fire-fighters Wear self-contained breathing apparatus and protective suit. Wear fire/flame resistant/retardant clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Prevent product from entering drains. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Individual protection measures Wear personal protective equipment. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep in properly labeled containers.

Incompatible materials: Incompatible with strong acids and bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure guidelines If this product contains any hazardous materials with occupational exposure limits established by the region specific regulatory bodies, the information is shown directly below this statement.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side-shields

Skin and body protection Protective gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General industrial hygiene practice Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Wear appropriate respirator when working with solvents above the exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid
Appearance Product Specific
Odor Characteristic
Color No information available
Odor Threshold No information available

PH	Not applicable
Melting point/freezing point	Not available
Boiling Point/Range	202 °C
Flash point	91 °C
Method	FP of lowest component used
Evaporation rate	No information available
Flammability Limit in Air	
Upper flammability limit:	9.5
Lower flammability limit:	1.3
Vapor pressure	No information available
Vapor density	Not available
Specific Gravity	1.0547
Water solubility	Insoluble
Solubility in other solvents	No information available
Partition coefficient	Not available
Autoignition temperature	Not available
Decomposition temperature	No data available
Kinematic viscosity	No information available
Dynamic viscosity	Not available
Explosive properties	No information available
Oxidizing Properties	No information available

Other Information

Weight % VOC	62.4
Weight % Solids	37.6
Density (lbs/gal) U.S.	8.8017

10. STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Incompatible with strong acids and bases.
Hazardous Decomposition Products	nitrogen oxides (NOx). Carbon dioxide (CO2).

11. TOXICOLOGICAL INFORMATION

Toxilogical Information	
1-Methyl-2-Pyrrolidinone	LD50 Oral 3598 mg/kg (Rat)
872-50-4	LC50 Inhalation 3.1 mg/L (Rat)

Skin corrosion/irritation	No test data available
Serious eye damage/irritation	No test data available
Respiratory or skin sensitization	No test data available
Germ cell mutagenicity	No test data available
Carcinogenicity	No test data available
Reproductive toxicity	No test data available
STOT-single exposure	No test data available
STOT-repeat exposure	No test data available
Aspiration hazard	No test data available

Likely routes to exposure

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	5832 Mg/kg
ATEmix (inhalation-dust/mist)	13.2 mg/L

12. ECOLOGICAL INFORMATION				
Toxic				
Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1-Methyl-2-Pyrrolidinone 872-50-4	EC50 > 500 mg/L 72 h			EC50 = 4897 mg/L 48 h
Persistence and degradability		No data available		
Bioaccumulative potential		No data available		
Mobility in soil		No data available		
	Component			log Pow
	1-Methyl-2-Pyrrolidinone 872-50-4			-0.46

13. DISPOSAL CONSIDERATIONS	
Waste disposal methods	In accordance with local, state/provincial and national regulations.
Disposal Methods	In accordance with local and national regulations. Empty containers should be taken to local recyclers for disposal.
US EPA Waste Number:	Consult 40 CFR Part 261

14. TRANSPORT INFORMATION

DOT

UN number 1993
Proper shipping name Combustible Liquid, n.o.s (N-methyl pyrrolidone)
Hazard class CBL
Packing group III

TDG

UN number 1993
Proper shipping name Combustible Liquid, n. o. s. (N-methyl pyrrolidone)
Hazard class CBL
Packing group III

**IATA
 IMDG**

Not dangerous goods
 Not dangerous goods

15. REGULATORY INFORMATION

Inventories

TSCA Complies
DSL/NDSL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Federal Regulations

SARA Section 313 Toxic Chemical List

This product does not contain any components reportable under Section 313 (40 CFR 372).

Component	CAS-No	Weight %	SARA 313 - Threshold Values
1-Methyl-2-Pyrrolidinone - 872-50-4	872-50-4	61.69	1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactivity Hazard	No

CERCLA

US State Regulations

California Prop. 65

"WARNING" This product contains the following chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

Component	California Prop. 65
1-Methyl-2-Pyrrolidinone - 872-50-4	Developmental

State Right-to-Know

Component	New Jersey	Massachusetts	Pennsylvania
1-Methyl-2-Pyrrolidinone 872-50-4	X	X	X

U.S. EPA Label information

EPA Pesticide registration number Not applicable

Canada

All components of this product are included on the DSL or NDSL or are not required to be listed.

This product has been classified according to GHS hazard criteria and the SDS contains all of the information required by the HPA.

NFPA _____ **Health** 2 **Flammability** 2 **Reactivity** 0

16. OTHER INFORMATION

Revision	Revision 1 03/23/2016: Initial Revision Revision 2 04/26/1016: Updated SDS based on Binder Reclassification.
Further information	The information supplied in this Safety Data Sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This 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 other process.