



SAFETY DATA SHEET M667 Orange Curable Ink

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	M667 Orange Curable Ink
Product number	71001726, 71001727, 71001728
Container size	6 x 1 Liter, 4 x 1 Gallon, 55 Gallon Drum

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Printing ink.
Uses advised against	Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Supplier	Matthews Marking Systems 6515 Penn Avenue Pittsburgh, PA 15206 412.665.2500 412.828.4545 info@matw.com
Manufacturer	Matthews Marking Systems Zona Franca La Lima Multitenant #8 Cartago, Costa Rica 30106 (506) 4000-1103

1.4. Emergency telephone number

Emergency telephone	Chemtrec US : 1-800-424-9300 Chemtrec World: 1-703-527-3887
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Irrit. 2 - H315 Carc. 2 - H351 STOT SE 3 - H336
Environmental hazards	Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) R52/53

2.2. Label elements

Hazard pictograms



Signal word

Warning

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Hazard statements	H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTRE/doctor if you feel unwell. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/ container in accordance with national regulations.
Contains	Mineral Spirits 66, Kerosene
Supplementary precautionary statements	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P308+P313 IF exposed or concerned: Get medical advice/ attention. P321 Specific treatment (see medical advice on this label). P332+P313 If skin irritation occurs: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage. P405 Store locked up.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Mineral Spirits 66		30-<50%
CAS number: 64742-47-8	EC number: 265-149-8	
Classification	Classification (67/548/EEC or 1999/45/EC)	
Asp. Tox. 1 - H304	Xn; R65. R10	
Kerosene		30-<50%
CAS number: 8008-20-6	EC number: 232-366-4	REACH registration number: 05-2118361034-52-0000
Classification	Classification (67/548/EEC or 1999/45/EC)	
Asp. Tox. 1 - H304	Xn; R65. Xi; R38. N; R51/53	
Polymerized Rosin Resin		10-<30%
CAS number: Proprietary	EC number: Proprietary	REACH registration number: Proprietary
Classification	Not Classified	

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Polyisoprene Resin		5-<10%
CAS number: Proprietary	EC number: Proprietary	REACH registration number: Proprietary
Classification		
Not Classified		
Titanium Dioxide		5-<10%
CAS number: 13463-67-7	EC number: 236-675-5	REACH registration number: 05-2118356670-41-0000
Classification		Classification (67/548/EEC or 1999/45/EC)
Not Classified		Xi; R38. Carc. Cat. 3 R40
Orange Organic Complex		1-<5%
CAS number: Proprietary	EC number: Proprietary	REACH registration number: Proprietary
Classification		Classification (67/548/EEC or 1999/45/EC)
Acute Tox. 4 - H332		Xn; R20

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Ingredient notes The exact percentage/concentration is withheld as a trade secret in accordance with 29 CFR 1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Consult a physician for specific advice. If medical advice is needed, have product container or label at hand. If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention immediately.
Ingestion	Do not induce vomiting. Aspiration hazard if swallowed. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin contact	Rinse immediately with plenty of water. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if symptoms are severe or persist after washing. Wash clothing and clean shoes thoroughly before reuse.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

General information	The product is considered to be a low hazard under normal conditions of use. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. See Section 11 for additional information on health hazards.
Inhalation	May cause respiratory system irritation. Vapour may irritate respiratory system/lungs. May cause drowsiness or dizziness.

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Ingestion	Harmful if swallowed. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. May cause nausea, headache, dizziness and intoxication.
Skin contact	Causes skin irritation. Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.
Eye contact	Causes eye irritation. Symptoms following overexposure may include the following: Pain or irritation. Profuse watering of the eyes. Irritation and redness, followed by blurred vision.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Water spray.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Flammable liquid and vapour. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO ₂). Carbon monoxide (CO).

5.3. Advice for firefighters

Protective actions during firefighting	Evacuate area. Stop leak if safe to do so. Use water to keep fire exposed containers cool and disperse vapours. Use water spray to reduce vapours.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No smoking, sparks, flames or other sources of ignition near spillage. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapours. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place.
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6.2. Environmental precautions

Environmental precautions	Avoid release to the environment. Do not discharge into drains or watercourses or onto the ground. Use appropriate containment to avoid environmental contamination. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Eliminate all sources of ignition. Stop leak if safe to do so. Do not touch or walk into spilled material. Take care as floors and other surfaces may become slippery. Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. When handling waste, the safety precautions applying to handling of the product should be considered. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
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6.4. Reference to other sections

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Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Provide eyewash station and safety shower. Good personal hygiene procedures should be implemented. Wash skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store at temperatures between 4.4°C/40°F and 32.2°C/90°F. Keep only in the original container in a cool, well-ventilated place. Protect from freezing and direct sunlight. Container must be kept tightly closed when not in use. Keep containers upright. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store in accordance with national regulations.

Storage class Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Mineral Spirits 66

Long-term exposure limit (8-hour TWA): WEL 100 ppm 573 mg/m³ Ireland

Kerosene

Long-term exposure limit (8-hour TWA): WEL 100 mg/m³ Ireland

Titanium Dioxide

Long-term exposure limit (8-hour TWA): WEL 4 mg/m³ respirable dust

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ inhalable dust

Orange Organic Complex

Long-term exposure limit (8-hour TWA): WEL 15 mg/m³ dust

WEL = Workplace Exposure Limit

Ingredient comments Data based on literature. Product not tested.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist. Use explosion-proof ventilating equipment.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield.

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Hand protection	It is recommended that chemical-resistant, impervious gloves are worn. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Butyl rubber. Nitrile rubber. Rubber (natural, latex). Frequent changes are recommended.
Other skin and body protection	Avoid contact with skin. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures	Wash contaminated skin thoroughly after handling. Provide eyewash station and safety shower.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Organic vapour filter.
Thermal hazards	If there is a risk of contact with hot product, all protective equipment worn should be suitable for use with high temperatures.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Coloured liquid.
Colour	Orange.
Odour	Aromatic hydrocarbons. Kerosene. Petroleum.
Melting point	Not applicable.
Initial boiling point and range	175°C/347°F @ 760 mm Hg
Flash point	37°C/99°F Closed cup.
Evaporation rate	0.01 (butyl acetate = 1)
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 5 % vol Lower flammable/explosive limit: 0.7 % vol
Vapour pressure	0.23 mm Hg @ 20°C/68°F
Vapour density	> 5
Relative density	0.90887 g/cc 908.87 g/l 7.57 lbs/gal
Solubility(ies)	Soluble in the following materials: Hydrocarbons. Organic solvents. Insoluble in water.
Partition coefficient	log Pow: 5.06
Auto-ignition temperature	220°C/428°F
Decomposition Temperature	Not applicable.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.
Comments	Information given is applicable to the product as supplied. Information declared as "Not available" or "Not applicable" is not considered to be relevant to the implementation of the proper control measures.

9.2. Other information

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Volatile organic compound This product contains a maximum VOC content of 628 g/l. This product contains a maximum VOC content of 5.23 lbs/gal.

HAPS Content 0.00

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react with the product: Strong oxidising agents.

10.4. Conditions to avoid

Conditions to avoid Avoid the following conditions: Heat, sparks, flames.

10.5. Incompatible materials

Materials to avoid Avoid contact with the following materials: Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Heating may generate the following products: Carbon dioxide (CO₂). Carbon monoxide (CO).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Information given is based on data of the components and of similar products.

Acute toxicity - inhalation

ATE inhalation (dusts/mists mg/l) 27.6

Specific target organ toxicity - single exposure

Target organs Eyes Respiratory system, lungs

Specific target organ toxicity - repeated exposure

Target organs Respiratory system, lungs Skin

Aspiration hazard

Aspiration hazard Aspiration hazard if swallowed. May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Toxicological information on ingredients.

Mineral Spirits 66

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin.

Specific target organ toxicity - single exposure

Target organs Central nervous system

Aspiration hazard

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Aspiration hazard May be fatal if swallowed and enters airways.

Kerosene

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 5.29

ATE inhalation (dusts/mists mg/l) 5.29

Specific target organ toxicity - single exposure

Target organs Central nervous system Respiratory system, lungs

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

Polymerized Rosin Resin

Toxicological effects No information available.

Titanium Dioxide

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.1

Species Rat

ATE oral (mg/kg) 5,000.1

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 10,000.1

Species Rabbit

ATE dermal (mg/kg) 10,000.1

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 6.82

Species Rat

ATE inhalation (dusts/mists mg/l) 6.82

Carcinogenicity

IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans.

Orange Organic Complex

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,000.1

Species Rat

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ATE oral (mg/kg)	2,000.1
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC ₅₀ dust/mist mg/l)	1.27
Species	Rat
ATE inhalation (dusts/mists mg/l)	1.27

SECTION 12: Ecological information

Ecological information on ingredients.

Polymerized Rosin Resin

Ecotoxicity No information available.

Titanium Dioxide

Ecotoxicity The product is not expected to be hazardous to the environment.

12.1. Toxicity

Ecological information on ingredients.

Kerosene

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 0.91-2.82 mg/l, Oncorhynchus mykiss (Rainbow trout)
LC₅₀, 96 hours: 1.99 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 1.6 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 5.0-11.0 mg/l, Algae

Titanium Dioxide

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >1000 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >1000 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: >100 mg/l, Pseudokirchneriella subcapitata

Orange Organic Complex

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 1 mg/l, Brachydanio rerio (Zebra Fish)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 100 mg/l, Daphnia magna
EC₅₀, 48 hours: > 100 mg/l, Daphnia magna

Acute toxicity - aquatic plants NOEC, 72 hours: > 1 mg/l, Scenedesmus subspicatus
EC₅₀, 72 hours: > 1 mg/l, Scenedesmus subspicatus

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Acute toxicity - microorganisms EC₅₀, 3 hours: > 1000 mg/l, Activated sludge
 NOEC, 3 hours: 1000 mg/l, Activated sludge

12.2. Persistence and degradability

Ecological information on ingredients.

Orange Organic Complex

Persistence and degradability The product is not readily biodegradable.

Biodegradation Soil - Degradation 10%: 28 days

12.3. Bioaccumulative potential

Partition coefficient log Pow: 5.06

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. When handling waste, the safety precautions applying to handling of the product should be considered. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Dispose of waste product or used containers in accordance with local regulations. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

Disposal methods Dispose of contents/container in accordance with national regulations. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 1210

UN No. (IMDG) 1210

UN No. (ICAO) 1210

UN No. (ADN) 1210

14.2. UN proper shipping name

Proper shipping name (ADR/RID) PRINTING INK

Proper shipping name (IMDG) PRINTING INK

Proper shipping name (ICAO) PRINTING INK

Proper shipping name (ADN) PRINTING INK

14.3. Transport hazard class(es)

ADR/RID class 3

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ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS	F-E, S-D
ADR transport category	3
Emergency Action Code	•3Y
Hazard Identification Number (ADR/RID)	30
Tunnel restriction code	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
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15.2. Chemical safety assessment

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

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US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

Mineral Spirits 66

Kerosene

Titanium Dioxide

Japan - ENCS

Mineral Spirits 66

Kerosene

Titanium Dioxide

Korea - KECI

Mineral Spirits 66

Kerosene

Titanium Dioxide

China - IECSC

Mineral Spirits 66

Kerosene

Titanium Dioxide

Philippines – PICCS

Mineral Spirits 66

Kerosene

Titanium Dioxide

New Zealand - NZIOC

Mineral Spirits 66

Kerosene

Titanium Dioxide

Taiwan - NECI

Kerosene

Titanium Dioxide

SECTION 16: Other information

Issued by	Matthews Marking Systems - Chemical Services Department
Revision date	01/07/2018
Revision	3
Supersedes date	06/04/2016
SDS number	4977

M667 Orange Curable Ink

SDS status	Approved.
Risk phrases in full	R10 Flammable. R20 Harmful by inhalation. R38 Irritating to skin. R40 Limited evidence of a carcinogenic effect. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R65 Harmful: may cause lung damage if swallowed. R67 Vapours may cause drowsiness and dizziness.
Hazard statements in full	H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H332 Harmful if inhaled. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H411 Toxic to aquatic life with long lasting effects.

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 process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.