

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/16/2009

Reviewed on 02/16/2009

1 Identification of substance

- **Product details**
- **Trade name:** T Ink Red
- **Article number:** T-R-Q, T-R-P, M88-R
- **Application of the substance / the preparation** Printing inks
- **Manufacturer/Supplier:**
Marsh Shipping Supply Co., LLC
926 McDonough Lake Road - Unit E
Collinsville, IL 62234
USA
- **Information department:** MSDS DEPT.
- **Emergency information:**
Chemtrec 800-424-9300
International 703-527-3887

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Hazardous components

1330-20-7	xylene	Xn, Xi; R 10-20/21-38 Danger: 3.1.D/3, 3.1.I/4, 3.2/2 Warning: 2.6/3	73.073%
100-41-4	ethylbenzene	Xn, F; R 11-20 Danger: 2.6/2 Warning: 3.1.I/4	16.139%
	Phenolic polymer	R 18	6.464%
6483-64-3	C.I. Solvent Red 18	Xi; R 36 Warning: 3.3/2A	3.5%
108-88-3	toluene	Xn, Xi, F; R 11-38-48/20-63-65-67 Danger: 2.6/2; 3.10/1, 3.7/2, 3.9/2 Warning: 3.2/2, 3.8/3	0.448%
98-54-4	4-tert-butylphenol	Xi; R 36/37/38 Danger: 3.2/1C Warning: 3.8/3	0.27%

· Additional information:

For the wording of the listed risk phrases refer to section 16.

This product contains one or more reported or suspect carcinogens which are noted IARC, NTP, OSHA, ACGIH, OR NIOSH respectively

This product contains one or more reported or suspect mutagens

This product contains one or more Hazardous Air Pollutants (HAPS) which are regulated under Section 112 of the Clean Air Act.

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3 Hazards identification

· Hazard description:



Xn Harmful

· Information pertaining to particular dangers for man and environment:

The product has to be labelled due to the calculation procedure of international guidelines.

R 10 Flammable.

R 20/21 Harmful by inhalation and in contact with skin.

R 38 Irritating to skin.

· Inhalation

Can cause nasal and respiratory tract irritation. Can cause Central Nervous System effects including fatigue, dizziness, nausea, vomiting, unconsciousness, respiratory failure, headache, possible hearing impairment.

· Potential Chronic Health Effects

Prolonged or repeated exposure of vapors, spray, or material may cause diseases of the lungs. Reports have associated repeated overexposure to solvents with brain and nervous system damage. Intentional misuse of this product may be harmful or fatal.

· Target Organs

Overexposure to this material or its components has been suggested as a cause of the following effects in laboratory animals and/or humans, and may aggravate preexisting disorders of these organs in humans: Anemia, Blood disorders, Brain damage, Cardiac function, eye, liver, lung, menstrual and fertility, skin, respiratory, Central Nervous System

· Classification system:

The classification was made according to the latest editions of international substances lists and from component data and msds information

· NFPA ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

· GHS label elements



Danger

3.1/3 - Toxic in contact with skin.

3.1/4 - Harmful if inhaled.

3.2/2 - Causes skin irritation.



Warning

2.6/3 - Flammable liquid and vapour.

· Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

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Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/ equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.

• **Response:**

IF ON SKIN: Wash with plenty of soap and water.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Specific treatment (see label).
 Specific measures (see label).
 If skin irritation occurs: Get medical advice/attention.
 Remove/Take off immediately all contaminated clothing.
 Take off contaminated clothing and wash before reuse.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.

• **Storage:**

Store in a well-ventilated place. Keep cool.
 Store locked up.

• **Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

• **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
 Take affected persons out into the fresh air.
 Involve doctor immediately.

• **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
 In case of unconsciousness place patient stably in side position for transportation.

• **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

• **After eye contact:**

Rinse opened eye for fifteen minutes under running water. If irritation persists, consult a doctor.

• **After swallowing:** Do not induce vomiting; immediately call for medical help.

• **Information for doctor:**

• **The following symptoms may occur:**

Breathing difficulty
 Headache
 Dizziness
 Thirst
 Cramp
 Gastric or intestinal disorders
 Coughing
 Allergic reactions

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Nausea

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
ABC powder
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Particular danger of slipping on leaked/spilled product.
Keep away from ignition sources
Wear protective clothing.
- **Measures for environmental protection:**
Do not allow product to reach sewage system or any water course.
Prevent from spreading (e.g. by damming-in or oil barriers).
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Dispose of the collected material according to regulations.
- **Additional information:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Handle with care. Avoid jolting, friction and impact.
Use solvent-proof equipment.
Hydrocarbon solvents are basically non-conductors of electricity and can become electrostatically charged during mixing or moving, observe grounding/grounding of containers and other equipment when handling.

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· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

Prevent impact and friction.

Use explosion-proof apparatus / fittings and spark-proof tools.

Fumes can combine with air to form an explosive mixture.

Flammable gas-air mixtures may be formed in empty receptacles.

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.

Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.

Store away from foodstuffs.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Protect from humidity and water.

Protect from exposure to the light.

8 Exposure controls and personal protection

· **Components with limit values that require monitoring at the workplace:**

1330-20-7 xylene

PEL 435 mg/m³, 100 ppm

REL Short-term value: 655 mg/m³, 150 ppm

Long-term value: 435 mg/m³, 100 ppm
(o-, m-, & p-isomers)

TLV Short-term value: 651 mg/m³, 150 ppm

Long-term value: 434 mg/m³, 100 ppm
BEI

100-41-4 ethylbenzene

PEL 435 mg/m³, 100 ppm

REL Short-term value: 545 mg/m³, 125 ppm

Long-term value: 435 mg/m³, 100 ppm

TLV Short-term value: 543 mg/m³, 125 ppm

Long-term value: 434 mg/m³, 100 ppm
BEI

Phenolic polymer

PEL 15*,5** mg/m³

*Total dust, **Respirable Fraction

TLV 10*,3** mg/m³

*Total Dust, **Respirable Fraction

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108-88-3 toluene

PEL	Short-term value: C 300; 500* ppm Long-term value: 200 ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV	188 mg/m ³ , 50 ppm Skin; BEI

98-54-4 4-tert-butylphenol

TLV	NE ppm
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

Do not eat, drink, smoke or sniff while working.

· **Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation.

Do not breath vapors, spray mists, or sanding dusts. Use air purifying respirators fitted with organic vapor/HEPA cartridges only if air monitoring demonstrates solvent/particulate levels do not exceed the respirator maximum use concentration. Use properly fitted NIOSH approved respirators. Local and general exhaust should minimize any exposure.

· **Protection of hands:**



Protective gloves

· **Material of gloves**

Nitrile rubber, NBR

Nitrile or natural rubber gloves are typically used to protect from minor contact. Butyl type are best for prolonged contact.

· **Eye protection:**



Vapor proof safety goggles or full face respirator

· **Body protection:**

Solvent resistant protective clothing

Impervious protective clothing

Tyvek(R) coveralls to protect from light overspray protection or Saranex 23-P(R) for moderate exposure.

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9 Physical and chemical properties

· General Information

Form: Fluid
 Color: Red
 Odor: Alcohol-like

· Change in condition

Melting point/Melting range: Undetermined.
 Boiling point/Boiling range: > 34°C (> 93°F)

· Flash point: 26°C (79°F)

· Ignition temperature: 430°C (806°F)

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
 In use, may form flammable/explosive vapour-air mixture.

· Explosion limits:

Lower: 1.0 Vol %
 Upper: 7.8 Vol %

· Vapor pressure at 20°C (68°F): 9.5 hPa (7 mm Hg)

· Density at 20°C (68°F): 0.885 g/cm³

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

· Solvent content:

Organic solvents: 89.7 %
 VOC content: 793 g/l

· Solids content: 10.3 %

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Dangerous reactions Reacts with acids, alkalis and oxidizing agents.
- Dangerous products of decomposition:
 Nitrogen oxides
 Carbon monoxide and carbon dioxide

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

1330-20-7 xylene

Oral	LD50	4300 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)

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100-41-4 ethylbenzene

Oral	LD50	3500 mg/kg (rat)
Dermal	LD50	17800 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:**
Sensitizing effect through inhalation is possible with prolonged exposure.
Sensitizing effect by skin contact is possible with prolonged exposure.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
Danger through skin absorption.

12 Ecological information

- **General notes:** This statement was deduced from the properties of the single components.

13 Disposal considerations

- **Product:**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **DOT regulations:**



- **Hazard class:**
3
D.O.T. - Ground only
ORM-D material
Ink, not regulated by Title 49 Part 173.150 Exceptions for class 3 (flammable) liquids (c).
- **Identification number:**
UN1210
- **Packing group:**
III
- **Proper shipping name (technical name):** PRINTING INK

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· **Label** 3· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** 3 Flammable liquids
 · **Danger code (Kemler):** 30
 · **UN-Number:** 1210
 · **Packaging group:** III
 · **Description of goods:** 1210 PRINTING INK

· **Maritime transport IMDG:**

· **IMDG Class:** 3
 · **UN Number:** 1210
 · **Label** 3
 · **Packaging group:** III
 · **EMS Number:** F-E,S-D
 · **Marine pollutant:** No
 · **Propper shipping name:** PRINTING INK

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** 3
 · **UN/ID Number:** 1210
 · **Label** 3
 · **Packaging group:** III
 · **Propper shipping name:** PRINTING INK

· **UN "Model Regulation":** UN1210, PRINTING INK, 3, III

15 Regulations

· **Sara**· **40 CFR Section 355 (extremely hazardous substances):**

50-00-0 formaldehyde

RQ 100 lbs = TPQ 500 lbs 0.006%

· **Section 313 (Specific toxic chemical listings):**

1330-20-7 xylene

73.073%

100-41-4 ethylbenzene

16.139%

108-88-3 toluene

0.448%

50-00-0 formaldehyde

0.006%

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· **SARA Title III Section 311/312 - Hazard Communication Standard (40 CFR 370)**

1330-20-7	xylene	73.073%
100-41-4	ethylbenzene	16.139%
108-88-3	toluene	0.448%
50-00-0	formaldehyde	0.006%

· **EPCRA Section 304: Emergency Notification (refer to headings 40 CFR 355 and CERCLA 40 CFR 302.4 for listing in this section)**

1330-20-7	xylene	Listed	73.073%
100-41-4	ethylbenzene	Listed	16.139%
50-00-0	formaldehyde	listed	0.006%

· **RCRA: Resource Conservation and Recovery Act / Code**

50-00-0	formaldehyde	Code U122	0.006%
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· **TSCA (Toxic Substances Control Act):**

All ingredients are listed or exempt.

1330-20-7	xylene
100-41-4	ethylbenzene
	Phenolic polymer
6483-64-3	C.I. Solvent Red 18
108-88-3	toluene
98-54-4	4-tert-butylphenol
556-67-2	octamethylcyclotetrasiloxane
50-00-0	formaldehyde
68855-54-9	Kieselguhr, soda ash flux-calcined
14464-46-1	cristobalite
14808-60-7	Quartz (SiO ₂)

· **Proposition 65 /Chemicals known to cause cancer:**

This product contains chemical(s) which are currently listed on the California list of Known Carcinogens.

100-41-4	ethylbenzene	16.139%
50-00-0	formaldehyde	0.006%

· **Proposition 65: Chemicals Known to Cause Reproductive Toxicity**

This product contains the following chemical(s) which are currently listed on the California list of Known Reproductive Toxins.

108-88-3	toluene	0.448%
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· **Clean Air Act- Hazardous Air Pollutants**

1330-20-7	xylene	SOCMI,XOV	73.073%
100-41-4	ethylbenzene	SOCMI , Code V	16.139%
108-88-3	toluene	SOCMI, XOV	0.448%
50-00-0	formaldehyde	XOV, SOCMI / ARP 15,000 lbs TQ	0.006%

· **Clean Water Act: Section 311(b)(2)(A) & Priority Pollutants**

1330-20-7	xylene	100 lbs	73.073%
100-41-4	ethylbenzene	Priority Pollutant 1000 lbs RQ	16.139%
108-88-3	toluene	Priority Pollutant RQ 1000 lbs	0.448%
50-00-0	formaldehyde	R.Q. 100 lbs	0.006%

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· **ACGIH Carcinogen**

1330-20-7	xylene	A4	73.073%
100-41-4	ethylbenzene	A3 (Skin)	16.139%
108-88-3	toluene	A4 and Skin Designation	0.448%
50-00-0	formaldehyde	A2	0.006%
14808-60-7	Quartz (SiO ₂)	A2	<0.00001%

· **Cancerogenity categories**· **EPA (Environmental Protection Agency)**

1330-20-7	xylene	D	73.073%
100-41-4	ethylbenzene	D	16.139%
108-88-3	toluene	D	0.448%

· **IARC (International Agency for Research on Cancer)**

1330-20-7	xylene	3	73.073%
100-41-4	ethylbenzene	2B	16.139%
108-88-3	toluene	3	0.448%
50-00-0	formaldehyde	1	0.006%
14464-46-1	cristobalite	1	0.00001%
14808-60-7	Quartz (SiO ₂)	1	<0.00001%

· **NTP (National Toxicology Program)**

50-00-0	formaldehyde	2	0.006%
14464-46-1	cristobalite	K	0.00001%
14808-60-7	Quartz (SiO ₂)	K	<0.00001%

· **TLV (Threshold Limit Value established by ACGIH)**

1330-20-7	xylene	A4	73.073%
108-88-3	toluene	A4	0.448%
14808-60-7	Quartz (SiO ₂)	A2	<0.00001%

· **NIOSH (National Institute for Occupational Safety and Health)**

1330-20-7	xylene	Standard 75-168, Guidelines 81-123	73.073%
100-41-4	ethylbenzene	Guidelines 81-123	16.139%
108-88-3	toluene	Std. 73-11023, Guidelines 81-123	0.448%
50-00-0	formaldehyde	Std. 77-126 ; Guidelines 89-104	0.006%
14464-46-1	cristobalite	.05mg/m ³	0.00001%
14808-60-7	Quartz (SiO ₂)	Std. 75-120, Guidelines 81-123, CIB 81-137	<0.00001%

· **OSHA-Ca (Occupational Safety & Health Administration)**

50-00-0	formaldehyde	0.006%
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· **CERCLA- SARA Title III: 40 CFR Part 302, Table 302.4**

1330-20-7	xylene	100 lbs	73.073%
100-41-4	ethylbenzene	1000 lbs R.Q.	16.139%
50-00-0	formaldehyde	RQ 100 lbs	0.006%

· **State regulations**· **New Jersey Right-to-know**

1330-20-7	xylene	DOT 1307, Sub. No. 2014	73.073%
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100-41-4	ethylbenzene	DOT 1175 Sub. No. 0851	16.139%
108-88-3	toluene	DOT 1294, Sub. No. 1866	0.448%
50-00-0	formaldehyde	DOT:1198 Sub No. 946 EHS 175 II 1 A	0.006%

· Massachusetts Right-to-know / Hazardous Substance Codes

1330-20-7	xylene	2,4 F8 F9	73.073%
100-41-4	ethylbenzene	2,4,5,6 F7 F8 F9	16.139%
108-88-3	toluene	2,4,5,6 F7 F8 F9	0.448%
50-00-0	formaldehyde	1,2,3,4,5,6,7 *E*C* F6	0.006%
14464-46-1	cristobalite	1,2,3,4 *E*C	0.00001%
14808-60-7	Quartz (SiO ₂)	1,2,4 *E*C* F5	<0.00001%

· Florida Hazardous / Toxic Substance Lists

1330-20-7	xylene	Toxic	73.073%
100-41-4	ethylbenzene	Toxic	16.139%
108-88-3	toluene	Toxic	0.448%
50-00-0	formaldehyde	repealed	0.006%
14464-46-1	cristobalite	Toxic	0.00001%
14808-60-7	Quartz (SiO ₂)	Toxic	<0.00001%

· Pennsylvania Hazardous Substances

1330-20-7	xylene	E	73.073%
100-41-4	ethylbenzene	E	16.139%
108-88-3	toluene	E	0.448%
50-00-0	formaldehyde	ES	0.006%
68855-54-9	Kieselguhr, soda ash flux-calcined	--	0.001%
14464-46-1	cristobalite	--	0.00001%

· Michigan Hazardous Substance

100-41-4	ethylbenzene	Listed	16.139%
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· Minnesota Right To Know / Hazardous Substances

1330-20-7	xylene	Code ANO	73.073%
100-41-4	ethylbenzene	Code AO	16.139%
108-88-3	toluene	Codes: ANO, Skin hazard	0.448%
50-00-0	formaldehyde	Codes: ANORT / Carcinogen	0.006%
14464-46-1	cristobalite	A	0.00001%
14808-60-7	Quartz (SiO ₂)	Codes A	<0.00001%

· Maine

1330-20-7	xylene	73.073%
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· Rhode Island

1330-20-7	xylene	73.073%
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· New York Right To Know / Hazardous Substances

1330-20-7	xylene	Air RQ 1000 lbs, Land RQ 1 lb	73.073%
100-41-4	ethylbenzene	Air RQ 1000 lbs, Land RQ 1 lb	16.139%
108-88-3	toluene	Air RQ 1000 lbs, Land RQ 1 lb	0.448%
50-00-0	formaldehyde	Air RQ 100 lbs, Land RQ 1 lb	0.006%

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· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**

Xn Harmful

· **Hazard-determining components of labelling:**

xylene

· **Risk phrases:**

10 Flammable.

20/21 Harmful by inhalation and in contact with skin.

38 Irritating to skin.

· **Safety phrases:**

3 Keep in a cool place.

9 Keep container in a well-ventilated place.

16 Keep away from sources of ignition - No smoking.

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

25 Avoid contact with eyes.

36/37 Wear suitable protective clothing and gloves.

43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

51 Use only in well-ventilated areas.

60 This material and its container must be disposed of as hazardous waste.

· **National regulations:**

· **OSHA Process Safety Management: Appendix A to 29 CFR 1910.119**

50-00-0	formaldehyde	T.Q. 1000 lbs	0.006%
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· **Occupational Safety and Health Act (OSHA)**

Immediate (acute) health hazard

Delayed (chronic) Health Hazard

Fire Hazard

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

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.

· **Relevant R-phrases**

10 Flammable.

11 Highly flammable.

18 In use, may form flammable/explosive vapour-air mixture.

20 Harmful by inhalation.

20/21 Harmful by inhalation and in contact with skin.

36 Irritating to eyes.

36/37/38 Irritating to eyes, respiratory system and skin.

38 Irritating to skin.

48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

63 Possible risk of harm to the unborn child.

65 Harmful: may cause lung damage if swallowed.

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USA

Material Safety Data Sheet

acc. to ISO/DIS 11014

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Trade name: T Ink Red

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67 Vapours may cause drowsiness and dizziness.

· **Contact:** Mike Rickert

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Reglement internationale concernent le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA