



United Color Manufacturing, Inc.
P.O. Box 480
Newtown, PA, U.S.A., 18940
Telephone: (215) 860-2165

Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 1 of 9

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier : **Unisol® Liquid Red BK-50**

Product Code(s) : None reported.

Product Use : Marker dye for petroleum products

Chemical Family : Mixture.

Supplier's name and address: **United Color Manufacturing, Inc.**
P.O. Box 480
Newtown, PA, U.S.A.
18940
Website: www.unitedcolor.com

Manufacturer's name and address: **Refer to Supplier**

Information Telephone # : 215-860-2165 (Monday - Friday, 9:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

SECTION 2 - HAZARDS IDENTIFICATION

Classification : OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification:
Flammable liquid;
Acute Health Hazard;
Chronic Health Hazard.

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:
Class B2 (Flammable Liquids);
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Emergency Overview : Dark red liquid. Aromatic odour.
Warning! Flammable liquid and vapor. May be harmful or fatal if swallowed. May be an aspiration hazard. Can enter the lungs and cause damage. May be harmful if inhaled. May cause respiratory irritation. May cause central nervous system depression. Causes skin and eye irritation. Contains material which may cause cancer, based on animal data. Possible reproductive hazard. Contains material that may cause adverse reproductive effects, based on animal data. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

- Inhalation** : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
- Skin** : May cause moderate to severe skin irritation. Symptoms may include redness, itching and swelling. May be absorbed through the skin.
- Eyes** : May cause mild to moderate irritation. Symptoms may include stinging and tearing.



United Color Manufacturing, Inc.
P.O. Box 480
Newtown, PA, U.S.A., 18940
Telephone: (215) 860-2165

Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 2 of 9

Ingestion : Ingestion may irritate digestive tract and cause nausea, vomiting and diarrhea. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin.
Prolonged overexposure may cause liver and kidney effects.

Carcinogenic status : Possible cancer hazard. See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Potential teratogen. May cause birth defects. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt. %</u>
Kerosene	8008-20-6	30.00 - 50.00
2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-me derivatives	92257-31-3	20.00 - 40.00
Xylene	1330-20-7	10.00 - 20.00
Heavy aromatic solvent naphtha	64742-94-5	7.00 - 13.00
Ethylbenzene	100-41-4	1.00 - 5.00

SECTION 4 - FIRST AID MEASURES

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.

Skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If irritation or symptoms develop, seek medical attention.

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Seek immediate medical attention/advice.

Notes For Physician : Symptoms may be delayed. This product is a CNS depressant.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

: Flammable liquid and vapor. This material will ignite when exposed to heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment). Product may float, and be re-ignited at the water's surface. Vapours may be heavier than air and may collect in confined and low-lying areas. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.1200)

: Flammable Liquid Class 1C.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

: Not expected to be sensitive to mechanical impact. May be sensitive to static discharge. Vapours in the flammable range may be ignited by a static discharge of sufficient energy.



Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 3 of 9

Suitable extinguishing media : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

Special fire-fighting procedures/equipment

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

: Carbon oxides; Nitrogen oxides; Sulphur oxides; Aldehydes; Hydrocarbons; irritating fumes and smoke.

NFPA Rating

0 - Minimal	1 - Slight	2 - Moderate	3 - Serious
Health: 2	Flammability: 3	Instability: 0	Special Hazards: None.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials : Do not use combustible absorbents, such as sawdust.

Special spill response procedures

: In case of a transportation accident, in the United States contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): Xylene (100 lbs / 45.4 kg); Ethylbenzene (1000 lbs / 454 kg)

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures : Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Use proper bonding and grounding techniques when transferring liquid. Avoid contact with incompatible materials. Wash thoroughly after handling.

Storage requirements : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Strong oxidizing agents; Acids; Reducing agents.

Special packaging materials : Always keep in containers made of the same materials as the supply container.



Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 4 of 9

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Kerosene	200 mg/m ³ (jet fuel/Kerosene)	N/Av	N/Av	N/Av
2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar"-me derivatives	N/Av	N/Av	N/Av	N/Av
Xylene	100 ppm	150 ppm	100 ppm	N/Av
Heavy aromatic solvent naphtha	N/Av	N/Av	500 ppm (as petroleum distillates, naphtha)	N/Av
Ethylbenzene	20 ppm	N/Av	100 ppm	N/Av

Ventilation and engineering measures

: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers.

Skin protection

: Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

Eye / face protection

: Chemical splash goggles must be worn when handling this material.

Other protective equipment

: Wear resistant clothing and boots. Other equipment may be required depending on workplace standards. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: Dark red liquid.
Odour	: aromatic	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: N/Av	Specific gravity	: N/Av
Melting/Freezing point	: < - 30°C (< - 22°F)	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: insoluble
Vapour density (Air = 1)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: N/Av
Flash point	: 35 - 40°C (95 - 104°F)		
Flash point Method	: Tag closed cup	Auto-ignition temperature	: N/Av



Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 5 of 9

Lower flammable limit (% by vol.) : N/Av **Upper flammable limit (% by vol.)** : N/Av
Flame Projection Length : N/Av **Flashback observed** : N/Av
Viscosity : < 1.0 cps @ 40°C (104°F)
Absolute pressure of container : N/Av

Section 10: Stability And Reactivity

Stability and reactivity : Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization : Will not occur.
Conditions to avoid : Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas.

Materials To Avoid And Incompatibility

: Oxidizing agents; Acids; Reducing agents.

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system, central nervous system, liver and kidneys.
Routes of exposure : *Inhalation*: YES *Skin Absorption*: YES *Skin & Eyes*: YES *Ingestion*: YES
Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Kerosene	> 5000 mg/m ³	> 5000 mg/kg	> 2000 mg/kg
2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar"-me derivatives	N/Av	> 5000 mg/kg	N/Av
Xylene	6350 ppm	3523 mg/kg	12,180 mg/kg
Heavy aromatic solvent naphtha	> 11.4 mg/L/6H	> 6000 mg/kg	> 3160 mg/kg
Ethylbenzene	4000 ppm	3500 mg/kg	15,380 mg/kg

Carcinogenic status : This product contains Ethylbenzene, an IARC Group 2B and ACGIH Group A3 carcinogen. Contains an o-Toluidine-based azo dye. Metabolic studies on some Azo-dyes, following prolonged skin or oral cavity contact, have detected reduction of azo bonds to aromatic amines. This product, therefore, could potentially metabolize to o-toluidine and o-aminoazotoluene upon prolonged skin or oral cavity contact. o-Toluidine and o-aminoazotoluene have been identified as animal carcinogens.

Reproductive effects : May affect reproductive system.
Contains: a version of 2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar"-me derivatives.
A reproductive screening study in rats with some versions of 2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar"-me derivatives produced adverse effects on reproduction [ovarian atrophy; reduced litter size; reduced pup weight with no apparent abnormal morphology of the surviving pups] at 20 and 80 mg/kg/day. The relevance of these findings for humans is uncertain, but may be predictive of the potential to cause harm.

Teratogenicity : This product contains Xylene. Xylene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Mutagenicity : Not expected to be mutagenic in humans.

Epidemiology : Not available.



Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 6 of 9

- Sensitization to material** : Not expected to be a skin or respiratory sensitizer.
Synergistic materials : Not available.
Irritancy : Moderate skin irritant. Moderate eye irritant.
other important hazards : See Section 2 for additional information.
Conditions aggravated by overexposure
: Pre-existing skin, eye, respiratory and central nervous system disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself. The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Contains: Xylene; Ethylbenzene; Kerosene; Solvent naphtha (petroleum), heavy aromatic.

The acute toxicity of xylene is (ECOTOX):

Toxicity to fish - LC50/96h/rainbow trout = 8.2 mg/L

Toxicity to daphnia - EC50/24h/ Daphnia magna (Water flea) = 75.5 mg/L

The acute toxicity of ethylbenzene is (OECD):

Toxicity to fish - LC50/96h/rainbow trout = 4.2 mg/L

Toxicity to daphnia - LC50/48h/daphnia = 1.81 mg/L

Toxicity to algae - EC50/96h/green algae = 3.6 mg/L

The acute toxicity of Kerosene is (literature):

Toxicity to fish - LC50/96h expected to be 10 - 100 mg/L

Toxicity to daphnia - EC50/48h expected to be 10 - 100 mg/L

Toxicity to algae - EC50/72h expected to be 10 - 100 mg/L

The acute toxicity of solvent naphtha (petroleum), heavy aromatic is (supplier):

Toxicity to fish - LC50/96h/rainbow trout = 3.6 mg/L

Toxicity to daphnia - EC50/48h/daphnia = 1.1 mg/L

Toxicity to algae

EC50/72h/algae = 7.9 mg/L

NOEL/72h/algae = 0.2 mg/L

This product also contains: a version of 2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-me derivatives. There is no available data on the environmental acute toxicity of this azo dye.

- Mobility** : No data is available on the product itself.
Persistence : No data is available on the product itself. Contains: Xylene; Ethylbenzene; Kerosene. Xylene is considered to be inherently biodegradable. Ethylbenzene is considered to be inherently biodegradable. Kerosene is not considered to be readily biodegradable.
Bioaccumulation potential : No data is available on the product itself. Contains: Xylene; Ethylbenzene. The log Pow for Xylene is 3.12. The log Pow for Ethylbenzene is 3.15.

Other Adverse Environmental effects

: No additional information.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws.



Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	UN1993	Flammable liquids, n.o.s. (Kerosene; Xylene)	3	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.150.				
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Kerosene; Xylene)	3	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.				
ICAO/IATA	UN1993	Flammable liquid, n.o.s. (Kerosene; Xylene)	3	III	
ICAO/IATA Additional information	Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.				
IMDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Kerosene; Xylene)	3	III	
IMDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

US CERCLA Reportable quantity (RQ): Xylene (100 lbs / 45.4 kg); Ethylbenzene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Acute Health Hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Ethylbenzene; Xylene.

US State Right to Know Laws:

California Proposition 65: This product contains a chemical known to the State of California to cause cancer. This product contains: Ethylbenzene.



United Color Manufacturing, Inc.
P.O. Box 480
Newtown, PA, U.S.A., 18940
Telephone: (215) 860-2165

Unisol® Liquid Red BK-50

MSDS Preparation Date (mm/dd/yyyy): 05/14/2012

Page 8 of 9

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: Ethylbenzene (CA, MA, MN, NJ, PA, RI); Xylene (CA, MA, MN, NJ, PA, RI).

International Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

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

SECTION 16 - OTHER INFORMATION

HMIS Rating	:	* - Chronic hazard	0 - Minimal	1 - Slight	2 - Moderate	3 - Serious
		<i>Health: *2</i>		<i>Flammability: 3</i>		<i>Reactivity: 0</i>

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2012.
2. International Agency for Research on Cancer Monographs, searched 2012.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2012 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - October 2006 version.
6. California Proposition 65 List - March 16, 2012 version.

