SAFETY DATA SHEET

Citrus Solvent

Issue Date: 12-Oct-2016 **Revision Date:** 20-Nov-2024 **Version** 2

Section 1. IDENTIFICATION

Product Identifier

Product Form: Substance
Substance Name: Technical Grade d-Limonene
SDS# CS
HS Code: 29021900
Synonyms: d-Limonene, Citrus Extractives, Citrus Terpenes
Use of the substance/mixture: For use in adhesive resins, flavors, fragrances, solvents, and degreasing.
Name, Address and Telephone of the Responsible Party
Supplier Address:
Real Milk Paint, LLC
126 Commerce Dr.
Hohenwald, TN 38462
www.realmilkpaint.com

Emergency Telephone Number

Chemtel 24 hours (within US only)	800-255-3924
Chemtel 24 hours (outside continental US)	813-248-0585

Section 2. HAZARDS IDENTIFICATION

This material is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) and Regulation (EC) No 1272-2008.

Classification of the substance or mixture:

Flammable Liquids	Category - 3
Skin Corrosion/Irritation	Category - 2
Skin Sensitization	Category - 1B
Eye Irritation	Category - 2B
Aspiration Toxicity	Category – 1

Signal Word - Warning:

Hazard Statements:
Flammable liquid and vapor
Very toxic to aquatic life with long lasting effects
Harmful if swallowed
May cause respiratory irritation
Causes skin irritation
May cause allergic skin reaction

General Precautionary Statements:
Keep out of reach of children.
Read label before use.
If medical advice is needed, have product container or label at hand.
Keep away from heat surfaces, sparks, open flames, and other ignition sources. NO SMOKING.
Keep container tightly closed.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands, and any exposed skin thoroughly after handling
Do not eat, drink, or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.

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

Disposal:
Dispose of contents/container to an approved waste disposal plant in accordance with local/regional/nationals/international regulations.

FDA – Food Additives Generally Recognized as Safe (GRAS): 182.20
Classification: Substance
Marine pollutant: Y

Section 3. COMPOSTION/INFORMATION ON INGREDIENTS

Name	Chemical Name/Synonyms	CAS No.	%	Substance Presenting Health Hazards (R-phases)
D-limonene[1,2]	D-Limonene Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)- / Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (R)- / (R)-p-Mentha-1,8-diene / p-Mentha-1,8-diene, (R)-(+)- / Limonene, D- / Menthadiene, 1,8(9)-p- / d-Limonene / Limonene, d- / (4R)-1-Methyl-4-(1-methylethenyl)cyclohexene / (4R)-p-Mentha-1,8-diene / 1-Methyl-4-prop-1-en-2-yl-cyclohexene / (R)-1-Methyl-4-(1-methylethenyl)cyclohexene / d-LIMONENE / (R)-1-Methyl-4-(1-methylethenyl)cyclohex-1-ene / (R)-4-Isopropenyl-1-methylcyclohex-1-ene / Limonene / LIMONENE / limonene, (+)-	CAS No. :5989-27-5 EC No.:304-454-3	100	Xn; N; R10-38-43-50/53-65

ECHA Registration # N/A

[1] d-Limonene is the primary chemical component of citrus extractives

[2] U.S. FDA – Food Additives Generally Recognized as Safe (GRAS) CFR 21 Part 182.20 Hydrocarbons %: 98 See Section 16 for the full text of the R phrases mentioned in this Section.

Section 4. FIRST AID MEASURES

INHALATION	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
SKIN CONTACT	If on skin wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Treat symptomatically.
EYE CONTACT	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
INGESTION	IF SWALLOWED: Call a POISON CENTER/DOCTOR if you feel unwell. Rinse mouth.

Section 5: FIRE-FIGHTING MEASURES

PHYSICAL HAZARD	Flammable Material
CONDITIONS OF FLAMMABILITY	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. NO SMOKING
SUITABLE EXTINGUISHING MEDIA	In case of fire: Use carbon dioxide, dry chemical, and foam for extinction.
UNSTABLE FIRE EXTINGUISHING MEDIA	Do not use a water jet.
HAZARDOUS DECOMPOSITIN PRODUCTS	Hazardous decomposition products may form and include the following materials: Carbon oxides.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS	Fire-fighters should wear appropriate protective equipment and a self-contained breathing apparatus for firefighting if necessary.

Section 6: ACCIDENTAL RELEASE MEASURES

Environmental Precautions	Prevent further leakage or spillage. Keep away from drains, surface and ground water and soil. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers, surface, or ground water.
Methods and Material for Containment and Cleanup	
Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in

	container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. **Note: See section 1 for emergency contact information.**

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling	Put on appropriate personal protective equipment (see Section 8) Avoid breathing vapors Do not get in eyes, on skin, or on clothing Wash hands and face thoroughly after handling Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area Wear eye and face protection Use personal protective equipment as required. In case of inadequate ventilation wear respiratory protection.
Conditions for Safe Storage, Including any Incompatibilities	Keep Cool Protect from sunlight Store in a dry place. Store in a closed container Store in a well-ventilated place. Keep container tightly closed.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following information is given as general guidance

ENGINGEERING CONTROLS	None established
EYE/FACE PROTECTION	Wear chemical safety glasses, googles, or face shield
SKIN PROTECTION	Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
RESPIRATORY PROTECTION	Under normal use conditions, with adequate ventilation, no special handling equipment required
ENVIRONMENTAL EXPOSURE CONTROLS	Do not allow material to contaminate ground water system, local authorities should be advised if significant spillages cannot be contained.

Section 9: EXPOSURE CONTROLS/PERSONAL PROTECTION

APPEARANCE	
• Form	Liquid
• Color	Clear
• Odor	Characteristic strong citrus aroma
• Odor Threshold	No data available
• pH	No data available
Safety Data	
• Flash Point	**48°C/118°F**

• Boiling Point	**Above 100°C/212°F**
• Boiling Range	No data available
• Freezing Point	No data available
• Freezing Range	No data available
• Melting Point	No data available
• Melting Range	No data available
Flammability (solid, gaseous)	No data available
Ignition Temperature	No data available
Solubility(ies)	**Oil**
Flammability or Explosion Limits	
• Lower	No data available
• Upper	No data available
Vapor Pressure:	No data available
Vapor Density:	No data available
Relative Density:	No data available
Evaporation Rate:	No data available
Decomposition Temperature:	No data available
Auto-Ignition Temperature	No data available
Viscosity:	No data available
Partition coefficient	
• n-octanol/water	No data available
Danger of Explosion:	No data available

Section 10: STABILITY AND REACTIVITY

REACTIVITY	Minimal Hazard
CHEMICAL STABILITY	Stable
POSIBILITY OF HAZARDOUS REACTIONS	NHT, an antioxidant, can be added to prevent oxidation. Avoid long-term exposure to air. If storing partially filled containers, fill headspace with an inert gas such as nitrogen or carbon dioxide.
CONDITIONS TO AVOID	Keep away from heat, sparks, and flames. Keep away from children.
IMCOMPATIBLE MATERIALS	Strong oxidizing agents and strong acids, including acidic clays, peroxides, halogens, vinyl chloride, and iodine pentafluoride.
HAZARDOUS DECOMPOSITION PRODUCTS	Oxides of d-limonene, which can result from improper storage and handling, are known to cause skin sensitization. No decomposition if stored properly.
POSSIBILITY OF HAZARDOUS REACTION	BHT, an antioxidant, can be added to prevent oxidization. Avoid long term exposure to air. If storing partially filled containers, fill headspace with an inert gas such as nitrogen or carbon dioxide.

Section 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	Conclusion/Summary	Oral LD50 – rat->4,400 mg/kg Dermal LD50 – rabbit->2,000 mg/kg
SKIN CORROSION/IRRITATION	Conclusion/Summary	No data available
SERIOUS EYE DAMAGE/IRRITATION	Conclusion/Summary	No data available
RESPIRATORY OR SKIN SENSITIZATION	Conclusion/Summary	No data available
GERM CELL MUTAGENICITY	Conclusion/Summary	No data available
CARCINOGENICITY	Conclusion/Summary	No component of this product at levels greater than or equal to 0.1% is identified as carcinogen or potential carcinogen.
REPRODUCTIVE TOXICITY	Conclusion/Summary	No data available
STOT-SINGLE EXPOSURE	Conclusion/Summary	No data available
STOT-REPEAT EXPOSURE	Conclusion/Summary	No data available
ASPIRATION HAZARD	Conclusion/Summary	No data available
POTENTIAL HEALTH EFFECTS	Inhalation Ingestion Skin Eyes	May cause respiratory irritation Harmful if swallowed Causes skin irritation, may cause an allergic skin reaction Causes eye irritation
ADDITIONAL INFORMATION	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.	

Section 12: ECOLOGICAL INFORMATION

ECOTOXICITY EFFECTS	According to the official classification this product may be very toxic to aquatic life. However, due to the physical properties of the product (density and volatility) it will not remain in the environment for an extended period of time.
PERSISTENCE AND DEGRADABILITY	d-Limonene is classified as readily biodegradable.
BIOACCUMULATIVE POTENTIAL	The octanol-water partition coefficient (Kow) for d-Limonene is 4.23. The potential for bioaccumulation in the environment is possible. However, the metabolism of citrus extractives into non-accumulating metabolites greatly reduces the risk of bioaccumulation.
MOBILITY IN ENVIRONMENT	Citrus extractives volatilize rapidly. Citrus extractives are expected to volatilize from soil or water to the air and oxidize to carbon dioxide in the presence of sunlight.

Section 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Recycling is a strongly preferred to disposal or burning. If disposing, please do so in accordance with official regulations in your area. Keep in mind that this product should not be disposed along with household garbage. Do not allow this product to reach any sewage waste system, as it may be detrimental to aquatic life. *European waste catalogue: e.g., 02 03 03 wastes from solvent extraction.*

Recommendation: Empty contaminated packaging thoroughly. Packaging may be recycled or repurposed after thorough and proper cleaning. Note that this packaging may not be cleansed and disposed of in the same manner as the product.

Moistened solids (e.g., cloth, pulp, filter panels, binger) can be burnt after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
European waste catalogue: e.gh.15 02 02 Filter and absorption materials with hazardous agents.

General Note: All disposal of substance or packaging should be in accordance with all national, state, and local regulations.

Section 14: TRANSPORT INFORMATION

This information is given as general guidance. Please refer to current shipping paper for most up to date shipping information, including exemptions and special circumstances.

The listed transportation classification does not address regulatory variations due to changes in package size, mode of shipment, or other regulatory descriptions.

Road – ADR

Proper Shipping Name:	TERPENE HYDROCARBONS, N.O.S.
Hazard Class:	3
UN Number:	UN2319
Packing Group:	III
Label/Placard:	3 Flammable Liquid

Rail – RID

Proper Shipping Name:	TERPENE HYDROCARBONS, N.O.S.
Hazard Class:	3
UN Number:	UN2319
Packing Group:	III
Label/Placard:	3 Flammable Liquid

Sea – IMDG

Proper Shipping Name:	TERPENE HYDROCARBONS, N.O.S.
Hazard Class:	3
UN Number:	UN2319
Packing Group:	III
Marine Pollutant:	Yes
Label/Placard:	3 Flammable Liquid

Air – IATA

Proper Shipping Name:	TERPENE HYDROCARBONS, N.O.S.
Hazard Class:	3
UN Number:	UN2319
Packing Group:	III
Label/Placard:	3 Flammable Liquid

Section 15: REGULATORY INFORMATION

Per Regulation 67/548/EEC

Indication of principle danger

Warning symbols:

F – Flammable
N – Dangerous to the Environment
Xn – Harmful
R10-38-43-50/53-65
S24-37-61-62

Global Inventories

This product is included in the following inventories:

TSCA	United States Toxic Substances Control Act Section 8(b) Inventory	Complies
DSL/NDSL	Canadian Domestic Substances List/Non-Domestic Substances List	Complies
EINECS/ELINCS	European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances	Complies
ENCS	Japan Existing and New Chemical Substances	Complies
IECSC	China Inventory of Existing Chemical Substances	Complies
KECL	Korean Existing and Evaluated Chemical Substances	Complies
PICCS	Philippines Inventory of Chemicals and Chemical Substances	Complies
AICS	Australian Inventory of Chemical Substances	Complies

United States Federal Regulations

Proposition 65: California Safe Drinking Water and Toxic Enforcement Act of 1986

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

SARA Title III (Section 313)

Section 313 of Title III of the Superfund Amendments and Reauthorization Ace of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants to the Clean Water Act (40 CFR 122.21 and and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the

Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulation

California Proposition 65

This product container <2% naturally occurring Myrcene, and to the best of our knowledge, not subject to the labeling requirements under Proposition 65 chemicals.

US State Right-to-know Regulations

US EPA Label Information

EPA Pesticide Registration Number – Not applicable

Section 16: OTHER INFORMATION

This product was produced with Good Manufacturing Practices. It is a by-product of citrus, entirely of natural origin, and to the best of our knowledge contains no artificial flavors, sulfites, nitrites, or pesticide residue exceeding tolerances established by the U.S. FDA. It has not been adulterated or misbranded. It does NOT contain lead, cadmium, mercury, or hexavalent chromium or come in contact with these chemicals since it is a citrus derived essential oil produced by steam/vacuum distillation. Further, it is packaged in food grade containers with inert liners that do NOT contain lead, cadmium, mercury, or hexavalent chromium. It does NOT contain and is NOT manufactured with any of the Class I or II ozone-depleting substances listed under the United States Clean Air Act of 1990.

Full R-phrases

R10 – Flammable
R38 – Irritating to skin
R43 – May cause sensitization by skin contact
R50/53 – Very toxic to aquatic organisms; may cause long term adverse effects in the aquatic environment
R65 – Harmful: may cause lung damage if swallowed

Full S-phrases

S24 – Avoid contact with skin
S37 – Wear suitable gloves
S61 – Avoid release to the environment. Refer to special instructions/safety data sheets
S62 – If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Applicable CAS Numbers:

8028-48-6	Orange, sweet, extract
5989-27-5	d-Limonene, (R)-p-mentha-1,8-diene
94266-47-4	Citrus terpenes, citrus extract
68647-72-3	Terpenes and terpenes, sweet orange oil
68608-34-4	Terpenes and terpenes, citrus oil

Legend

ACGIH – American Conference of Governmental Industrial Hygienists
ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
AIHA – American Industrial Hygiene Association
BHT – Butylated Hydroxytoluene
CAS # - Chemical Abstracts Service
CFR – United States Code of Federal Regulations
DOT – United States Department of Transportation
EC# - European Commission (aka EINECS, European Inventory of Existing Commercial Chemical Substances.)

ECHA - European Chemicals Agency
FDA – United States Food and Drug Administration
GHS – Globally Harmonized System of Classification and Labeling of Chemicals
GRAS – Generally Recognized as Safe
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organization
IMDG – International Maritime Code for Dangerous Goods
NFPA – National Fire Protection Association
NIOSH – United States National Institute for Occupational Safety and Health
NTP – United States National Toxicology Program
OSHA – United States Occupational Health and Safety Administration
RID – Regulations Concerning the International Transport of Dangerous Goods by Rail
TWA – Time Weighted Average

Caution: The user should conduct his/her own experiments and establish proper procedures and control before attempting use on critical parts.

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	1	2	0	Not Determined

HMIS	Health Hazards	Flammability	Physical Hazards	Personal Protection
	1	2	0	G

Issue Date: 12-Oct-2016
Revision Date: 20-Nov-2024
Revision Note: Addition of Harmonization Code in Section 1, Addition and modification of information for substance clarification in Section 3.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of this publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text. The Real Milk Paint Co. assumes no responsibility for injury to vendee or third-party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, The Real Milk Paint Co. assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

End of Safety Data Sheet