

Safety Data Sheet

Product No. 16048-25 Silver Paint Diluent

Issue Date (03/014/2015)

Review Date (01/11/2023) Rev. 04

Section 1: Product and Company Identification

Product Name: Silver Paint Diluent

Synonym: 4-Methyl-2-pentanone, 4-Methylpentan-2-one, Iso-butyl methyl ketone, Methyl isobutyl ketone, Isopropylacetone

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Inside USA and Canada 1-800-237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Outside USA and Canada 1-530-243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

CHEMTREC USA and Canada Emergency Contact Number 1-800-424-9300 24 hours a day

CHEMTREC Outside USA and Canada Emergency Contact Number +1-703-741-5970 24 hours a day

Section 2: Hazard Identification

Classification of the substance or mixture.

Signal Word: **DANGER**

GHS Categories:

GHS02 - Flammable

Flammable Liquid:

Category 2

GHS07 – Irritant

Acute toxicity, Inhalation:

Category 4

Eye irritation:

Category 2A

GHS08 - Health hazard

Carcinogenicity, Inhalation:

Category 2

Specific target organ toxicity:

Category 3 (Central nervous system)

· single exposure

Label elements

GHS Pictograms:



GHS02



GHS07



GHS08

Hazard Statements

H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer if inhaled.

Precautionary Statements

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist or vapors.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

Repeated exposure may cause skin dryness or cracking.
May form explosive peroxides.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Section 3: Composition / Information on Ingredients

Hazardous component:	4-methylpentan-2-one
Synonyms:	Isobutyl methyl ketone, Methyl isobutyl ketone, Isopropylacetone
% w/w:	100%
Chemical Formula:	C ₆ H ₁₂ O
CAS No.:	108-10-1
EC No.:	203-550-1
Index-No.:	606-004-00-4
Molecular weight:	100.16 g/mol

Section 4: First Aid Measures

Description of first-aid measures

<u>General advice:</u>	Show this material safety data sheet to the doctor in attendance.
<u>If inhaled:</u>	After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
<u>In case of skin contact:</u>	Take off immediately all contaminated clothing. Rinse skin with water/ shower.
<u>In case of eye contact:</u>	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
<u>If swallowed:</u>	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Fire Fighting Measures

Extinguishing media:

Suitable extinguishing media:

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media:

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture:

- Carbon oxides
- Combustible.
- Pay attention to flashback.
- Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapors possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

Advice for firefighters:

- Stay in danger area only with self-contained breathing apparatus.
- Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information:

- Remove container from danger zone and cool with water.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel:

Do not breathe vapors, aerosols.

Avoid substance contact.

Ensure adequate ventilation.

Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

Environmental precautions:

Do not let product enter drains.

Risk of explosion.

Methods and materials for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up carefully with liquid-absorbent material (e.g. Chemisorb®).

Dispose of properly. Clean up affected area.

Reference to other sections:

For disposal see section 13.

Section 7: Handling and Storage

Precautions for safe handling:

Advice on safe handling

Work under hood.

Do not inhale substance/mixture.

Avoid generation of vapors/aerosols.

Advice on protection against fire and explosion:

Keep away from open flames, hot surfaces and ignition sources.

Take precautionary measures against static discharge.

Hygiene measures:

Immediately change contaminated clothing.

Apply preventive skin protection.

Wash hands and face after working with substance.

For precautions see section 2.2.

Storage conditions:

Keep container tightly closed in a dry and well-ventilated place.
 Keep away from heat and sources of ignition.
 Storage class (TRGS 510): 3: Flammable liquids

Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8: Exposure Controls / Personal Protection

Components with Workplace Control Parameters				
<u>Component</u>	<u>CAS No.</u>	<u>Value</u>	<u>Control Parameters</u>	<u>Basis</u>
4-Methylpentan-2-one	108-10-1	STEL	75 ppm	USA. ACGIH Threshold Limit Values (TLV)
<u>Remarks: Confirmed animal carcinogen with unknown relevance to humans</u>				
		TWA	50 ppm	USA. OSHA- TABLE Z-1 Limits for Air
			205 mg/m ³	Contaminants -1910.1000
		STEL	75 ppm	USA. OSHA- TABLE Z-1 Limits for Air
			300 mg/m ³	Contaminants – 1910.1000
		TWA	100 ppm	USA. Occupational Exposure Limits
			410 mg/m ³	(OSHA) – Table Z-1 Limits for Air
				Contaminants
		TWA	20 ppm	USA. ACGIH Threshold Limit Values (TLV)
<u>Remarks: Confirmed animal carcinogen with unknown relevance to humans</u>				
		STEL	75 ppm	USA
			300 mg/m ³	NIOSH Recommended Exposure limits
		TWA	50 ppm	USA.
			205 mg/m ³	NIOSH Recommended Exposure Limits
		PEL	50 ppm	California permissible exposure
			205 mg/m ³	limits for chemical contaminants
				(Title 8, Article 107)
		STEL	75ppm	California permissible exposure
			300mg/m ³	limits for chemical contaminants
				(Title 8, Article 107)

Biological Occupational Exposure Limits:				
<u>Component</u>	<u>CAS No.</u>	<u>Value</u>	<u>Biological Specimen</u>	<u>Basis</u>
4-Methylpentan-2-one	108-10-1	1.00 mg/l	Urine	ACGIH – Biological Exposure Indices (BEI)
<u>Remarks: End of shift (As soon as possible after exposure ceases)</u>				

Exposure controls:Appropriate engineering controls:

Immediately change contaminated clothing. Apply preventive skin protection.
 Wash hands and face after working with substance.

Personal protective equipment:

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin protection: Material: butyl-rubber
 Minimum layer thickness: 0.7 mm
 Break through time: 240 min
 Material tested: Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use.

<u>Body Protection:</u>	Flame retardant antistatic protective clothing.
<u>Respiratory protection:</u>	Required when vapors/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
<u>Control of environmental exposure:</u>	Do not let product enter drains. Risk of explosion.

Section 9 Physical and Chemical Properties

Appearance	Liquid
Color	Colorless
Odor	Characteristic
Odor threshold	0.1 ppm
pH	Neutral at 68 °F/20°C
Melting point/range	-112°F / -80°C (lit.)
Boiling point/range	234-244°F / 117-118°C
Flash point	57°F / 14°C (closed sup-DIN 51755 Part 1)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper explosion/flammability limit	8% (V)
Lower explosion/flammability limit	1.2% (V)
Vapor pressure	20 hPa (68°F / 20°C)
Vapor density	3.46 – (Air =0)
Relative vapor density	3.46 – (Air =0)
Density	0.801 g/cm ³ at 25°C (77°F) lit.
Relative Density	No data available
Solubility in H ₂ O	Completely soluble (14.1 g/L at 20°C/68°F)
Partition coefficient (n-octanol/water)	Log Pow: 1.9 (Bioaccumulation is not expected)
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	None
Surface tension	23.6mN/m at 20°C/68°F

Section 10: Stability and Reactivity

<u>Reactivity:</u>	Stable under recommended storage conditions. Vapors may form explosive mixture with air.
<u>Chemical stability:</u>	The product is chemically stable under standard ambient room temperature. Stable under recommended storage conditions. Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
<u>Possibility of hazardous reactions:</u>	Vapors may form explosive mixture with air.
<u>Conditions to avoid:</u>	May form peroxides on contact with air. Warming.
<u>Incompatible materials:</u>	Rubber, various plastics, copper.
<u>Hazardous decomposition products:</u>	In the event of fire: see section 5

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity:

Acute oral toxicity	LD50 – Rat: 2,080 mg/kg	<u>Method:</u> OECD Test Guideline 401
Acute inhalation toxicity	LC50 – Rat (male): 11.6 mg/L Exposure time: 4h Test atmosphere: vapor	OECD Test Guideline 403
Dermal	No data available	

Skin corrosion/irritation:

Skin	Rabbit: No skin irritation Exposure time: 4h	<u>Method:</u> OECD Test Guideline 404
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Serious eye damage/eye irritation:

Eyes	Rabbit: slight irritation Exposure time: 72h	<u>Method:</u> OECD Test Guideline 405
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Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization:

Maximization Test	Guinea pig: Negative	<u>Method:</u> OECD Test Guideline 406
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Germ cell mutagenicity:

Test Type:	Ames test	<u>Method:</u>
Test system:	Salmonella typhimurium	
Metabolic activation:	With and without metabolic activation	
Result:	Negative	OECD Test Guideline 471

Test Type:	Mutagenicity	
	Chromosome aberration (mammal cell test):	
Test system:	Rat hepatocytes	
Result:	Negative	OECD Test Guideline 473

Test Type:	In vitro mammalian cell gene mutation test	
Test system:	mouse lymphoma cells	
Metabolic activation:	With and without metabolic activation	
Result:	Negative	OECD Test Guideline 476

Test Type:	Micronucleus test	
Test system:	Mouse	
Application Route:	Intraperitoneal	
Result:	Negative	OECD Test Guideline 474

Carcinogenicity: Suspected of causing cancer if inhaled.

IARC: Group 2B: Possibly carcinogenic to humans (4-methylpentan-2-one)

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure:

May cause drowsiness or dizziness. - Respiratory Tract

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure:

No data available

Aspiration hazard:

No data available

Additional Information:

Repeated dose toxicity

Rat - male and female - Gavage - 90 d – NOAEL (No observed adverse effect level) - 250 mg/kg

LOAEL (Lowest observed adverse effect level) - 1,000 mg/kg

Remarks: Subchronic toxicity

RTECS: SA9275000 Blurred vision, Dermatitis

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

Section 12: Ecological Information**Toxicity**

Toxicity to fish: static test LC50 - Danio rerio (zebra fish) - > 179 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates:

static test EC50 - Daphnia magna (Water flea) - > 200 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC - Daphnia - 30 - 78 mg/l - 21 d
(OECD Test Guideline 211)

Persistence and degradability

Biodegradability: aerobic - Exposure time 28 d
Result: 83 % - Readily biodegradable.
Theoretical oxygen demand 2,720 mg/g
Remarks: (Lit.)

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment:

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Endocrine disrupting properties: No data available

Other adverse effects: No data available

Section 13 Disposal ConsiderationsWaste treatment methods:

Leave chemicals in original containers.

No mixing with other waste.

Handle uncleaned containers like the product itself.

Waste material must be disposed of in accordance with the local, state and federal regulations.

Section 14: Transportation Information

International Regulations

IATA-DGR

UN identification number	UN 1245
Proper shipping name	Methyl isobutyl ketone
Class	3
Packing group	II

IMDG-Code

UN identification number	UN 1245
Proper shipping name	Methyl isobutyl ketone
Class	3
Packing group	II
EmS Code	F-E, S-D

Domestic Regulations

DOT

UN identification number	UN 1245
Proper shipping name	Methyl isobutyl ketone
Class	3
Packing group	II

Special precautions for user

The transport classification(s) provided herein are for information purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet (SDS). Transportation classifications may vary by mode of transportation, package size, and variations in regional or country regulations.

Section 15: Regulatory Information

SARA 302 Components: This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III Section 313:

<u>4-methylpentan-2-one</u>	<u>CAS-No. 108-10-1</u>	<u>Revision Date 2007-03-01</u>
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SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

California Prop. 65

WARNING: This product can expose you to chemicals Methyl isobutyl ketone, which is/are known to the State of California to cause cancer and developmental toxicity. For more information go to www.P65Warnings.ca.gov

Section 16: Other Information

Full text of other abbreviations

ACGIH:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
US WEEL:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA:	8-hour, time-weighted average
ACGIH / STEL:	Short-term exposure limit
NIOSH REL/TWA:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL/ST:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA:	8-hour time weighted average
OSHA Z-2/TWA:	8-hour time weighted average

OSHA Z-2/CEIL: Acceptable ceiling concentration
OSHA Z-2/Peak: Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
US WEEL/TWA: 8-hr TWA

AICS - Australian Inventory of Chemical Substances;
AIIC - Australian Inventory of Industrial Chemicals;
ASTM - American Society for the Testing of Materials;
bw - Body weight;
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act;
CMR - Carcinogen, Mutagen or Reproductive Toxicant;
DIN - Standard of the German Institute for Standardization;
DOT - Department of Transportation;
DSL - Domestic Substances List (Canada);
ECx - Concentration associated with x% response;
EHS - Extremely Hazardous Substance;
ELx - Loading rate associated with x% response;
EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan);
ErCx - Concentration associated with x% growth rate response;
ERG - Emergency Response Guide;
GHS - Globally Harmonized System;
GLP - Good Laboratory Practice;
HMIS - Hazardous Materials Identification System;
IARC - International Agency for Research on Cancer;
IATA - International Air Transport Association;
IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration;
ICAO - International Civil Aviation Organization;
IECSC - Inventory of Existing Chemical Substances in China;
IMDG - International Maritime Dangerous Goods;
IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan);
ISO - International Organization for Standardization;
KECI - Korea Existing Chemicals Inventory;
LC50 - Lethal Concentration to 50 % of a test population;
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose);
MARPOL - International Convention for the Prevention of Pollution from Ships;
MSHA - Mine Safety and Health Administration;
n.o.s. - Not Otherwise Specified;
NFPA - National Fire Protection Association;
NO(A)EC - No Observed (Adverse) Effect Concentration;
NO(A)EL - No Observed (Adverse) Effect Level;
NOELR - No Observable Effect Loading Rate;
NTP - National Toxicology Program;
NZIoC - New Zealand Inventory of Chemicals;
OECD - Organization for Economic Co-operation and Development;
OPPTS - Office of Chemical Safety and Pollution Prevention;
PBT - Persistent, Bioaccumulative and Toxic substance;
PICCS - Philippines Inventory of Chemicals and Chemical Substances;
(Q)SAR - (Quantitative) Structure Activity Relationship;
RCRA - Resource Conservation and Recovery Act;
REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals;
RQ - Reportable Quantity;
SADT - Self-Accelerating Decomposition Temperature;

SARA - Superfund Amendments and Reauthorization Act;

SDS -Safety Data Sheet;

TCSI - Taiwan Chemical Substance Inventory;

TSCA - Toxic Substances Control Act (United States);

UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;

vPvB - Very Persistent and Very Bioaccumulative

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

SDS Form 0013F1V4