

SAFETY DATA SHEET**SECTION 1. IDENTIFICATION****Product identifier used on the label****: Silver****Product Code(s)** : SM-5007**Recommended use of the chemical and restrictions on use**: Printing Ink
Use pattern: Professional Use Only**Chemical family** : Mixture**Name, address, and telephone number of the supplier:****Quest Inks & Coatings****Name, address, and telephone number of the manufacturer:**

Refer to supplier

2401 Anson Drive
Mississauga, ON, Canada
L5S 1G1Supplier's Telephone # : 905-405-0041
Monday to Friday 8:00 am to 4:30 pm**24 Hr. Emergency Tel #** : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC).**SECTION 2. HAZARDS IDENTIFICATION****Classification of the chemical**

Viscous Silver liquid. Solvent odor.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquids - Category 2
Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
Specific Target Organ Toxicity, Single Exposure - Category 3 (respiratory)
Sensitization, skin - Category 1**Label elements***Hazard pictogram(s)**Signal Word***DANGER!***Hazard statement(s)*Highly flammable liquid and vapour
May cause an allergic skin reaction.
May cause drowsiness and dizziness.
May cause respiratory irritation.*Precautionary statement(s)*Keep away from heat, sparks and open flame. - No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.

SAFETY DATA SHEET

Use explosion-proof electrical/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing mist or vapours.
 Contaminated work clothing must not be allowed out of the workplace.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 In case of fire: Use water fog, dry chemical, CO₂ or 'alcohol' foam for extinction.

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

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

Other hazards

Other hazards which do not result in classification:
 Ingestion may cause irritation of the mouth, throat and stomach. Contact with eyes may cause irritation. May cause mild skin irritation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration</u>
Cyclohexanone	Cyclohexanone	108-94-1	75.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- | | |
|---------------------|--|
| <i>Ingestion</i> | : IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting. Rinse mouth thoroughly with water. 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. |
| <i>Inhalation</i> | : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTER or doctor/physician if you feel unwell. |
| <i>Skin contact</i> | : Wash affected areas with soap and water. Take off contaminated clothing and wash before re-use. Get medical attention if irritation develops and persists. |
| <i>Eye contact</i> | : Flush with large amounts of water for 15 minutes. Remove contact lenses if present and easy to do. If irritation or symptoms develop, seek medical attention. |

Most important symptoms and effects, both acute and delayed

- : May cause central nervous system depression. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. May cause respiratory irritation. Symptoms may include coughing, choking and wheezing. May cause an allergic skin reaction. Symptoms may include redness, itching and swelling. Direct skin contact may cause temporary redness. Direct eye contact may cause temporary redness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically. This product is a CNS depressant.

SAFETY DATA SHEET

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapour can travel considerable distance and flashback to a source of ignition. Vapours are heavier than air and collect in confined and low-lying areas.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquids - Category 2

Hazardous combustion products

- : Carbon dioxide and carbon monoxide. Other unidentified organic compounds .

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighter should wear full protective clothing including self contained breathing apparatus.

Special fire-fighting procedures

- : Evacuate personnel to safe areas. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control. Avoid release to the environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions

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

Methods and material for containment and cleaning up

- : Remove all sources of ignition. Ventilate the area. Prevent further leakage or spillage if safe to do so. Dike for water control. 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). Contact the proper local authorities.

Special spill response procedures

- : 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). Cyclohexanone (5000 lbs / 2270 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use only outdoors or in a well-ventilated area. Wear suitable protective equipment. Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Keep away from heat and open flames. - No smoking. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting/equipment. Keep away from oxidizing agents. Keep away from incompatibles. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use. Persons with recurrent skin eczema or sensitization problems should be excluded from working with this product. Once a person is sensitized, no further exposure to the material that caused the sensitization should be permitted.

SAFETY DATA SHEET

Conditions for safe storage Keep away from heat, sparks and open flame. - No smoking. Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Keep cool. Keep container tightly closed. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.

Incompatible materials : Strong oxidizers (e.g. Chlorine, Peroxides, etc.).

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Cyclohexanone	50 ppm	N/Av	50 ppm (200 mg/m ³)	N/Av

Exposure controls

Ventilation and engineering measures

: Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below their respective threshold limit value.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Seek advice from respiratory protection specialists.

Skin protection

: Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

: Chemical goggles must be worn to prevent dusts from entering the eyes.

Other protective equipment

: Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks. Wear protective gloves. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing mist or vapours. 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 soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Viscous Silver liquid.
Odour : Solvent odor.
Odour threshold : 18-32 ppm
pH : No information available.
Melting/Freezing point : Not available.
Initial boiling point and boiling range : Not available.
Flash point : 44°C
Flashpoint (Method) : closed cup
Evaporation rate (BuAe = 1) : No information available.
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.) :
 : Not available.
Upper flammable limit (% by vol.) :
 : Not available.
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : 3 mm Hg
Vapour density : 3.4

SAFETY DATA SHEET**Relative density / Specific gravity:**

Not available.
Solubility in water : Insoluble.
Other solubility(ies) : No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : Not available.

Auto-ignition temperature : Not available.
Decomposition temperature : No information available.
Viscosity : 1200
Volatiles (% by weight) : 75%
Volatile organic Compounds (VOC's) : 675 g/L

Absolute pressure of container : N/Ap

Flame projection length : N/Ap

Other physical/chemical comments: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
Conditions to avoid : Keep away from heat, direct flame and other ignition sources. Do not use in areas without adequate ventilation. Keep away from direct sunlight. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizers (e.g. Chlorine, Peroxides, etc.).
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure:**

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption : NO

SAFETY DATA SHEET

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation : May cause respiratory tract irritation. Symptoms may include coughing, choking and wheezing.

Sign and symptoms ingestion

Sign and symptoms skin : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
: May cause mild skin irritation on prolonged contact.

Sign and symptoms eyes : Direct eye contact may cause slight redness.

Potential Chronic Health Effects

: Prolonged exposure can cause redness, swelling, itching, cracking of the skin, dermatitis and sensitization.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Sensitization to material : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Skin sensitization - Category 1 May cause allergic skin reaction. Not expected to be a respiratory sensitizer.

Specific target organ effects : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Specific target organ toxicity, single exposure Category 3
May cause drowsiness and dizziness. May cause respiratory irritation.

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : No information available.

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Cyclohexanone	2650 ppm (vapour)	1500 mg/kg	1 000 mg/kg

Other important toxicological hazards

: See Section 2 for additional information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Cyclohexanone	108-94-1	> 527 mg/L	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	Factor
Cyclohexanone	108-94-1	820 mg/l	N/Av	None.

Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential : No data is available on the product itself.


<u>Components</u>	<u>Partition coefficient n-octanol/Water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Cyclohexanone	Very low	n/av

Mobility in soil : This material has low solubility and floats, and is expected to migrate from water to the land.**Other Adverse Environmental effects** : No data is available on the product itself.


SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers may contain hazardous residues.**Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.**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.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN1210	PRINTING INK	3	III	
TDG Additional information	May be shipped exceeding 30 kg as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass.				

SAFETY DATA SHEET

49CFR/DOT	UN1210	PRINTING INK	3	III	
49CFR/DOT Additional information	Limited Quantity exemption may be used if product is in containers or 5 Litres or less, per Section 173.150 of 49 CFR				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Cyclohexanone	108-94-1	Yes	5000 lb/ 2270 kg	None.	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Acute Health Hazard Fire Hazard

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Cyclohexanone	108-94-1	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

All ingredients are present on the DSL. WHMIS
Classification: See Section 2.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Cyclohexanone	108-94-1	205-500-4	Present	Present	(2)-726	KE-00047	Present	HSR001041

SECTION 16. OTHER INFORMATION

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
- CNS: Central Nervous System
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- EINECS: European Inventory of Existing Commercial chemical Substances

SAFETY DATA SHEET

IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
LC: Lethal Concentration LD:
Lethal Dose N/Ap: Not
Applicable
N/Av: Not Available
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 2015.
- 2. International Agency for Research on Cancer Monographs, searched 2015 3.
- Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2015 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - 2015.
- 6. California Proposition 65 List - 2015

Preparation Date (mm/dd/yyyy)

: 03/04/2019

Other special considerations for handling

- : Provide adequate information, instruction and training for operators.

Prepared by:

Quest Inks& Coatings
2401 Anson Drive
Mississauga, ON L5S 1G1
905-405-0041
www.questinks.com

DISCLAIMER

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its 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.

END OF DOCUMENT