SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200 and ANSI standard Z400.1-2010

TMC-SW 020

1. Product and company identification

Product identifier

Relevant identified uses of the substance or mixture and uses advised against

General use: Printing inks
Reserved for industrial and professional use.

Details of the supplier of the safety data sheet

Company name: PANNIER CORPORATION
Street/POB-No.: 207 Sandusky Street
Postal Code, city: Pittsburgh, PA 15212-5823
USA
WWW: www.pannier.com
E-mail: sales@pannier.com
Telephone: (412) 323-4900

Emergency phone number

INFOTRACI 24-Hour Emergency Number: 1-800-535-5053

2. Hazards identification

Emergency overview

Appearance: Form: liquid
Color: black
Odor: like solvent

Classification: Flammable Liquid - Category 2; Eye Irritation - Category 2A; Reproductive toxicant - Category 1B; Specific Target Organ Toxicity (Single Exposure) - Category3;

Hazard symbols:

Signal word: **Danger**

Hazard statements:
Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.
May damage the unborn child.

Precautionary statements:

Obtain special instructions before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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/vapors/spray.
Wash hands and face thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER/doctor if you feel unwell.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may have a narcotic effect.
Repeated exposure may cause skin dryness or cracking.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization:

Solvent mixture

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 78-93-3	Butanone	60 - 100 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 107-98-2	1-Methoxy-2-propanol	5 - 10 %	Flammable Liquid - Category 3. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 72812-34-1	C.I. Solvent black 27	5 - 10 %	Aquatic toxicity - chronic - Category 4.
CAS 872-50-4	N-Methyl-2-pyrrolidone	< 5 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Reproductive toxicant - Category 1B. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 97-64-3	Ethyl lactate	< 3 %	Flammable Liquid - Category 3. Eye Damage - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.

4. First aid measures

General information: When seeking medical attention bring along safety data sheet.

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing. Keep airway open. Seek medical treatment in case of troubles.

Following skin contact: Wash with plenty of water. Change contaminated clothing.
In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Eliminate all ignition sources if safe to do so. Subsequently consult an ophthalmologist.

After swallowing: If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

May cause drowsiness or dizziness.
Causes serious eye irritation.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may have a narcotic effect. Danger of cutaneous absorption.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

15.8 °F (c.c.)

Auto-ignition temperature:

No data available

Suitable extinguishing media:

Water fog, foam, powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

High power water jet

Specific hazards arising from the chemical

Highly flammable liquid and vapor.
Vapors are heavier than air and will travel at floor level.
Explosive mixtures with air may even form at room temperature.
Hazardous vapors may form during fires.
In case of fire may be liberated: Peroxides, carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Do not expose to high temperature. Danger of bursting and explosion. Cool exposed containers with water spray.
Move undamaged containers from immediate hazard area if it can be done safely.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

6. Accidental release measures

Personal precautions: Avoid exposure. Eliminate all ignition sources if safe to do so.
Do not breathe vapor or spray. Avoid contact with the substance.
Provide adequate ventilation. Keep unprotected people away.
When using do not smoke. Avoid sparks.
Cordon off downwind area at risk and warn inhabitants.

Environmental precautions:

Do not empty into drains. Danger of explosion !
In case of release, notify competent authorities.

Methods for clean-up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Final cleaning.

Additional information: Take precautionary measures against static discharges.
Use explosion-proof equipment and non-sparking tools/utensils.

7. Handling and storage

Handling

Advices on safe handling: Avoid exposure - obtain special instructions before use. Provide adequate ventilation, and local exhaust as needed. Do not breathe vapors.
Avoid contact with skin and eyes. Wear appropriate protective equipment.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

Storage

Requirements for storerooms and containers:

Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight.
Store containers in upright position. Explosion protection required.

Hints on joint storage: Do not store together with combustible or self-igniting materials or any highly flammable solids.
Keep away from: strong oxidizing agents, strong acids, strong alkalis, Reducing agents.
Keep away from food, drink and animal feedingstuffs.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
78-93-3	Butanone	USA: ACGIH: STEL	885 mg/m³; 300 ppm
		USA: ACGIH: TWA	590 mg/m³; 200 ppm
		USA: NIOSH: STEL	885 mg/m³; 300 ppm
		USA: NIOSH: TWA	590 mg/m³; 200 ppm
		USA: OSHA: TWA	590 mg/m³; 200 ppm
107-98-2	1-Methoxy-2-propanol	USA: ACGIH: STEL	369 mg/m³; 100 ppm
		USA: ACGIH: TWA	184 mg/m³; 50 ppm
		USA: NIOSH: STEL	540 mg/m³; 150 ppm
		USA: NIOSH: TWA	360 mg/m³; 100 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
78-93-3	Butanone	USA: ACGIH-BEI, urine	2 mg/L	MEK	end of exposure or end of shift
872-50-4	N-Methyl-2-pyrrolidone	USA: ACGIH-BEI, urine	100 mg/L	5-Hydroxy-N-methyl-2-pyrrolidone	end of exposure or end of shift

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Explosion protection required.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.
For this environment make sure that the goggles have only indirect ventilation or no ventilation. As appropriate chose anti-fog coated lens.

Skin protection: Wear suitable protective clothing.
In case of handling larger quantities: Flame-resistant antistatic protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Butyl caoutchouc (butyl rubber)
Layer thickness: 0.5 mm.
Breakthrough time: >60 min.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.
Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

General hygiene considerations:
Avoid exposure - obtain special instructions before use. Avoid generation of vapors/aerosols.
Do not breathe vapor or spray. Avoid contact with skin and eyes.
When using do not eat, drink or smoke. Change contaminated clothing.
After work, wash hands and face.
Use only non-sparking tools. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Safety shower and eye wash station should be easily accessible to the work area.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: liquid Color: black
Odor:	like solvent
Odor threshold:	No data available
pH value:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	> 300.2 °F
Flash point/flash point range:	15.8 °F (c.c.)
Evaporation rate:	No data available
Flammability:	Highly flammable liquid and vapor.
Explosion limits:	LEL (Lower Explosion Limit): 1.80 Vol-% (Butanone) UEL (Upper Explosive Limit): 11.50 Vol-% (Butanone)
Vapor pressure:	No data available
Vapor density:	No data available
Density:	at 68 °F: 0.85 g/mL (-)
Solubility:	No data available
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Explosive properties:	Product is not explosive. Vapors may form explosive mixtures with air.

10. Stability and reactivity

Reactivity: Highly flammable liquid and vapor.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions

Do not expose to high temperature. Danger of bursting and explosion.

Conditions to avoid: Keep away from heat sources, sparks and open flames.
Protect against direct sunlight.

Incompatible materials: Strong acids, strong alkalis, strong oxidizing agents and Reducing agents.

Hazardous decomposition products:

In case of fire may be liberated: Peroxides, carbon monoxide and carbon dioxide.

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 3000 mg/kg.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 7000 mg/kg.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 20 mg/L.

Skin corrosion/irritation: Lack of data.

Eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Reproductive toxicant -
Category 1B = May damage the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

0 percent of the mixture consists of ingredient(s) of unknown acute toxicity (oral).
2.6 percent of the mixture consists of ingredient(s) of unknown acute toxicity (dermal).
90.7 percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalativ).

Information about Butanone:
Acute oral toxicity LD50 Rat: 2737 mg/kg
Acute dermal toxicity LD50 Rabbit: 6480 mg/kg

Information about 1-Methoxy-2-propanol:
Acute oral toxicity LD50 Rat: 5200 mg/kg
Acute inhalation toxicity LC50 Rat: > 24 mg/L/1h
Acute inhalation toxicity LC50 Rat: 54.6 mg/L/4h
Acute dermal toxicity LD50 Rabbit: 13000 mg/kg

Information about n-Methyl-2-pyrrolidone:
Acute oral toxicity LD50 Rat: 3598 mg/kg
Acute inhalation toxicity LC50 Rat: 3.1 mg/L/4h
Acute dermal toxicity LD50 Rabbit: > 5000 mg/kg
Acute dermal toxicity LD50 Rat: 2500 mg/kg

Information about Ethyl lactate:
Acute oral toxicity LD50 Rat: > 2000 mg/kg
Acute dermal toxicity LD50 Rabbit: > 5000 mg/kg

12. Ecological information

Ecotoxicity

Aquatic toxicity:

0 percent of the mixture consists of components of unknown hazards to the aquatic environment.

Information about Butanone:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 3220 mg/L/96h.
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 5091 mg/L/48h.

Information about n-Methyl-2-pyrrolidone:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 1072 mg/L/96h.
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 4897 mg/L/48h.
Algae toxicity:
EC50 Desmodesmus subspicatus (green algae): > 500 mg/L/72h

Information about 1-Methoxy-2-propanol:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 20800 mg/L/96h.
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 23300 mg/L/48h.

Mobility in soil

No data available

Persistence and degradability

Further details:

Information about Butanone:
Abiotic degradation: quickly degradable (Air).
DOC reduction: >70%; BOD >60%; BOD5/COD ratio: >50%
Product is readily biodegradable.

Additional ecological information

Oxygen demand:
BOD: (Butanone, of ThOD/5d) 76 %
COD: (Butanone, of ThOD) 95 %
ThOD: (Butanone) 2,44 g/g

Volatile organic compounds (VOC):
approx. 95 % by weight = 808 g/L

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Do not dispose of with household waste. Dispose of waste according to applicable legislation.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

14. Transport information

USA: Department of Transportation (DOT)

Identification number:	UN1263
Proper shipping name:	UN 1263, Paint
Hazard class or Division:	3
Packing Group:	II
Labels:	3
Special provisions:	149, 367, B52, IB2, T4, TP1, TP8, TP28
Packaging – Exceptions:	150
Packaging – Non-bulk:	173
Packaging – Bulk:	242
Quantity limitations – Passenger aircraft / rail:	5 L
Quantity limitations – Cargo only:	60 L
Vessel stowage – Location:	B

Sea transport (IMDG)

UN number:	UN 1263
Proper shipping name:	UN 1263, Paint related material
Class or division, Subsidary risk:	Class 3, Subrisk-
Packing Group:	II
EmS:	F-E, S-E
Special provisions:	163, 367
Limited quantities:	5 L
Excepted quantities:	E2
Contaminated packaging - Instructions:	P001
Contaminated packaging - Provisions:	PP1
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T4
Tank instructions - Provisions:	TP1, TP8, TP28
Stowage and handling:	Category B.
Properties and observations:	Miscibility with water depends upon the composition.
Marine pollutant:	no
Segregation group:	none

Air transport (IATA)

UN/ID number:	UN 1263
Proper shipping name:	UN 1263, Paint related material
Class or division, Subsidary risk:	Class 3
Packing Group:	II
Hazard label:	Flamm. liquid
Excepted Quantity Code:	E2
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Special provisions:	A3 A72 A192
Emergency Response Guide-Code (ERG):	3L

15. Regulatory information

National regulations - U.S. Federal Regulations

Butanone:	TSCA Inventory: listed TSCA HPVC: not listed Other Environmental Laws: CERCLA: RQ 5000 lbs. RCRA Hazardous Wastes: Code U159 RCRA Groundwater Monitoring: Methods 8015, 8240 / PQL 10, 100 NIOSH Recommendations: Occupational Health Guideline: 0069*
1-Methoxy-2-propanol:	TSCA Inventory: listed TSCA HPVC: not listed Clean Air Act: SOCMI Chemical: yes NIOSH Recommendations: Occupational Health Guideline: 0536
N-Methyl-2-pyrrolidone:	TSCA Inventory: listed TSCA HPVC: not listed Other Environmental Laws: SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard
Ethyl lactate:	TSCA Inventory: listed TSCA HPVC: not listed

National regulations - U.S. State Regulations

Product:	Delaware Air Quality Management List: DRQ: 5000 - RQ State: Federal Regulations Apply Idaho Air Pollutant List: Title 585/Title 586: - Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9 Minnesota Haz. Substance: Codes: ANO - Ratings: 9.7 - Status: Air Pollutant Title III. TRI. New Jersey RTK Hazardous Substance: DOT: 1193 - Sub No.: 1258 - TPQ: - New York List of Hazardous Substances: RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical. Pennsylvania Haz. Substance code: E Washington Air Contaminant: TWA: 200 ppm - 590 mg - STEL: 300 ppm - 885 mg
Butanone:	Delaware Air Quality Management List: DRQ: 5000 - RQ State: Federal Regulations Apply Idaho Air Pollutant List: Title 585/Title 586: - Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9 Minnesota Haz. Substance: Codes: ANO - Ratings: 9.7 - Status: Air Pollutant Title III. TRI. New Jersey RTK Hazardous Substance: DOT: 1193 - Sub No.: 1258 - TPQ: - New York List of Hazardous Substances: RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical. Pennsylvania Haz. Substance code: E Washington Air Contaminant: TWA: 200 ppm - 590 mg - STEL: 300 ppm - 885 mg
1-Methoxy-2-propanol:	Idaho Air Pollutant List: Title 585: AAC: 18 - EL: 24 - OEL: 360 - Title 586: - Massachusetts Haz. Substance codes: 4,6 F8 Minnesota Haz. Substance: Codes: A - Ratings: 8.12 - Status: - Pennsylvania Haz. Substance code: - Washington Air Contaminant: TWA: 100 ppm - 360 mg - STEL: 150 ppm - 540 mg
N-Methyl-2-pyrrolidone:	California Proposition 65 code: D Delaware Air Quality Management List: DRQ: 100 - RQ State: State requirement differs from Federal Maine Hazardous Air Pollutants: Me 2005: HAP - Hap Rpt: 2000 Massachusetts Haz. Substance codes: 6 Minnesota Haz. Substance: Codes: I - Ratings: - - Status: Title III. TRI. New Jersey RTK Hazardous Substance: DOT: - Sub No.: 3716 - TPQ: - Pennsylvania Haz. Substance code: - California Proposition 65: developmental Rhode Island HSL: listed

Delaware Air Quality Management List:
DRQ: 5000 - RQ State: Federal Regulations Apply
Idaho Air Pollutant List: Title 585/Title 586: -
Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9
Minnesota Haz. Substance:
Codes: ANO - Ratings: 9.7 - Status: Air Pollutant Title III. TRI.
New Jersey RTK Hazardous Substance:
DOT: 1193 - Sub No.: 1258 - TPQ: -
New York List of Hazardous Substances:
RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.
Pennsylvania Haz. Substance code: E
Washington Air Contaminant:
TWA: 200 ppm - 590 mg - STEL: 300 ppm - 885 mg

National regulations - Great Britain

Hazchem-Code: •3YE

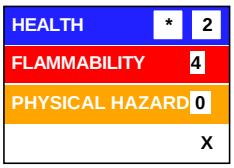
16. Other information

Text for labeling: Contains 60 - 100 % Butanone, 5 - 10 % 1-Methoxy-2-propanol, 5 - 10 % C.I. Solvent black 27, < 5 % N-Methyl-2-pyrrolidone, < 3 % Ethyl lactate. Safety data sheet available on request.

Hazard rating systems:

NFPA Hazard Rating:
Health: 2 (Moderate)
Fire: 4 (Severe)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 2 (Moderate) - Chronic effects
Flammability: 4 (Severe)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor



Literature: ICSC 0166

Reason of change: Changes in section 3: Composition / Information on ingredients
General revision

Date of first version: 6/18/2015

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.