

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY INFORMATION****PRODUCT NAME:** GRADE 590 INK**PRODUCT USE:** Flexographic Ink

CAS NO.: N/A Mixture
DOT HAZARD Flammable Liquid, Class III
CLASS: UN/NA ID UN 1210
NO.: 3H, 2F, 0R
HMIS CODES:

Not recommended for: Consumer Use

Manufacturer/Supplier:

PANNIER CORPORATION
207 SANDUSKY STREET
PITTSBURGH, PA 15212-5823 U.S.A.
412-323-4900
SALES@PANNIER.COM

24 Hr Emergency Telephone Number: INFOTRAC 1-800-535-5053**SECTION 2 - HAZARDS IDENTIFICATION**

Signal word

Danger

Hazard statements

H227 Combustible liquid.
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.

Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with national regulations.

Contains

Isophorone, Cyclohexanone

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS		WEIGHT
		OSHA PEL	ACGIH TLV	PERCENT
Cyclohexanone	108-94-1	N/est	25 PPM	10-30
Isophorone	78-59-1	N/est	N/est	30-60

SECTION 4 - FIRST AID MEASURES

General information Consult a physician for specific advice. Show this Safety Data Sheet to the medical personnel.

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention immediately.
Ingestion	Get medical attention immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting unless under the direction of medical personnel.
Skin Contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing. Wash clothing and clean shoes thoroughly before reuse.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards.

Inhalation May be harmful if inhaled. May cause eye and respiratory system irritation. Vapors in high concentrations are anesthetic. Overexposure to organic solvents may depress the central nervous system, causing dizziness and intoxication and, at very high concentrations, unconsciousness and death.

Ingestion Harmful if swallowed. May cause nausea, headache, dizziness and intoxication. May cause stomach pain or vomiting.

Skin contact Causes skin irritation. Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.

Eye contact This product is strongly irritating. Prolonged contact causes serious eye and tissue damage.

Indication of immediate medical attention and special treatment needed

SECTION 5 - FIRE FIGHTING MEASURES**Extinguishing media**

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Water spray. media

Special hazards arising from the substance or mixture

Flammability Class 3.0 Combustible Liquid II

Specific hazards Combustible liquid. Vapors are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO₂). Carbon monoxide (CO).

Protective actions during firefighting Evacuate area. Stop leak if safe to do so. Use water to keep fire exposed containers cool and disperse vapors. Use water spray to reduce vapors.

Special protective equipment Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective for firefighters clothing.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions No smoking, sparks, flames or other sources of ignition near spillage. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapors. Wash thoroughly after dealing with a spillage.

Environmental precautions

Environmental precautions Avoid release to the environment.

Methods and material for containment and cleaning up

Methods for cleaning up Eliminate all sources of ignition. Stop leak if safe to do so. Contain and absorb spillage with sand, earth or other non-combustible material. Dilute contained spill with water. Collect and place in suitable waste disposal containers and seal securely.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet.

Advice on general occupational hygiene

Conditions for safe storage including any incompatibilities. Do not eat, drink or smoke when using this product. Provide eyewash station and safety shower. Good personal hygiene procedures should be implemented. Wash skin thoroughly after handling.

Storage precautions. Keep only in the original container in a cool, well-ventilated place.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters Occupational exposure limits

Isophorone

Ceiling exposure limit: ACGIH 5 ppm 28 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 25 ppm 140 mg/m³ A3

Cyclohexanone

Long-term exposure limit (8-hour TWA): ACGIH 20 ppm

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 200 mg/m³

Short-term exposure limit (15-minute): ACGIH 50 ppm A3,

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans. Sk = Danger of cutaneous absorption.

Ingredient comments Data based on literature. Product not tested.

Isophorone (CAS: 78-59-1)

Immediate danger to life 200 ppm and health

Cyclohexanone (CAS: 108-94-1)

Immediate danger to life 700 ppm and health

Exposure controls

Appropriate engineering controls As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapor or mist. Use explosion-proof ventilating equipment.

Eye/face protection Wear tight-fitting, chemical splash goggles or face shield.

Hand protection It is recommended that chemical-resistant, impervious gloves are worn. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Butyl rubber. Nitrile rubber. Rubber (natural, latex).

Frequent changes are recommended.

Other skin and body protection Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures Provide eyewash station and safety shower.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Organic vapor filter.

Thermal hazards If there is a risk of contact with hot product, all protective equipment worn should be suitable for use with high temperatures.

Environmental exposure controls Keep container tightly sealed when not in use. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colored liquid.

Color Various

Odor Ketonic.

Odor threshold Not available.

pH pH (concentrated solution): 6.0 - 8.5

Melting point -8°C/18°F

Initial boiling point and range 155°C/311°F @ 760 mm Hg

Flash point 44°C/111°F CC (Closed cup).

Evaporation rate 0.01 (butyl acetate = 1)

Upper/lower flammability or explosive limits

Upper flammable/explosive limit: 9.4 % vol Lower flammable/explosive limit: 0.8 % vol

Vapour pressure 0.2 mm Hg @ 20°C/68°F

Vapour density 3.39

Relative density 1.21889 g/cc 1218.89 g/l 10.15 lbs/gal

Solubility(ies) Soluble in the following materials: Ketones. Insoluble in water.

Partition coefficient log Pow: 0.81

Auto-ignition temperature 420°C/788°F

Decomposition Temperature Not applicable.

Explosive properties Not applicable.

Oxidising properties Not applicable.

Comments Data based on literature. Product not tested. Information given is applicable to the product as supplied.

Information declared as "Not available" or "Not applicable" is not considered to be relevant to the implementation of the proper control measures.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity There are no known reactivity hazards associated with this product.

Stability Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions Strong oxidizing agents.

Conditions to avoid Heat, sparks, flames.

Materials to avoid Strong oxidizing agents.

Hazardous decomposition products Carbon dioxide (CO₂). Carbon monoxide (CO).

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicological effects

Acute toxicity - oral Data based on literature. Product not tested.

ATE oral (mg/kg)

Acute toxicity - dermal 892.86

ATE dermal (mg/kg) 1,964.29

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 94.02

Specific target organ toxicity - single exposure

Target organs Eyes Gastro-intestinal tract Respiratory system, lungs Skin

Specific target organ toxicity - repeated exposure

Target organs Central nervous system Gastro-intestinal tract Reproductive organs Respiratory system, lungs

Aspiration hazard

Aspiration hazard Not relevant.

Toxicological information on ingredients.

Isophorone

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 1870 mg/kg, Oral, Rat

ATE oral (mg/kg)
 Acute toxicity - dermal 500.0
 ATE dermal (mg/kg)
 Acute toxicity - inhalation 1,100.0
 Notes (inhalation LC₅₀)
 Acute toxicity - oral LD₅₀ 4600 ppm, Inhalation, Guinea pig
 Cyclohexanone
 ATE oral (mg/kg)
 Acute toxicity - dermal 500.0
 ATE dermal (mg/kg)
 Acute toxicity - inhalation 1,100.0
 ATE inhalation (vapours mg/l)
 Carcinogenicity 11.0
 IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity Data based on literature. Product not tested.

Acute toxicity - aquatic EC₅₀, 24 hours: 820 mg/l, Daphnia magna invertebrates

Ecological information on ingredients.

Isophorone

Acute toxicity - fish NOEC, 96 hours: 170 mg/l, Cyprinodon variegatus (Sheepshead minnow) LC₅₀, 96 hours: 145 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic LC₅₀, 48 hours: 120 mg/l, Daphnia magna invertebrates

Cyclohexanone

Acute toxicity - aquatic EC₅₀, 24 hours: 820 mg/l, Daphnia magna invertebrates

Persistence and degradability

Biodegradation - 90 - 100:

Ecological information on ingredients.

Cyclohexanone

Biodegradation - 90 - 100:

Bioaccumulative potential

Partition coefficient log Pow: 0.81

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste treatment methods

General information Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

Disposal methods Dispose of contents/container in accordance with national regulations. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local **Waste Disposal Authority**. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14 - TRANSPORT INFORMATION

UN Number

UN No. (DOT) 1210

UN No. (IMDG) 1210

UN No. (ICAO)

UN proper shipping name 1210

Proper shipping name (DOT) PRINTING INK

Proper shipping name (IMDG) PRINTING INK

Proper shipping name (ICAO) PRINTING INK

Transport hazard class(es)

IMDG Class 3

IMDG packing group III

590 Ink

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ICAO class/division 3

Transport labels

Packing group

DOT pack group III

ICAO packing group III

Environmental hazards

Environmentally Hazardous Substance No.

Special precautions for user

EmS F-E, S-D

SECTION 15 - REGULATORY INFORMATION

Regulatory Status Hazardous Chemical

Regulatory References OSHA Hazard Communication Standard, 29 CFR 1910.1200

US Federal Regulations

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

Cyclohexanone

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

Isophorone

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA (311/312) Hazard Categories

Cyclohexanone

Fire

Health:

Acute

Chronic

Isophorone

Health:

Acute

Chronic

Hazardous Air Pollutants Isophorone

(HAPS) - Clean Air Act

US State Regulations

California Air Toxics "Hot Spots" (A-I)

Isophorone

California Directors List of Hazardous Substances The following ingredients are listed or exempt:

Cyclohexanone Isophorone

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone Isophorone

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

Isophorone

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone Isophorone

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone Present.

Isophorone Present.

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone Present.

Isophorone Present.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

The following ingredients are listed or exempt:

Cyclohexanone Isophorone

Japan - MITI

The following ingredients are listed or exempt:

Cyclohexanone Isophorone

Korea - KECI

The following ingredients are listed or exempt:

Cyclohexanone

Isophorone

China - IECSC

The following ingredients are listed or exempt:

Cyclohexanone

Isophorone

Philippines - PICCS

The following ingredients are listed or exempt:

Cyclohexanone Isophorone

SECTION 16 - OTHER INFORMATION

DISCLAIMER

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN WERE OBTAINED FROM SOURCES BELIEVED TO BE GENERALLY RELIABLE, BUT, WE MAKE NO WARRANTY CONCERNING THEIR ACCURACY OR SUFFICIENCY, AND WE WILL NOT BE HELD LIABLE FOR CLAIMS RELATING TO ANY PARTY'S USE OF OR RELIANCE ON INFORMATION OR RECOMMENDATIONS CONTAINED HEREIN.

HMIS CODES: H - 3, F - 3, R - 0, P -

LEGEND: NDA - NO DATA AVAILABLE N/D - NOT DETERMINED N/E - NOT ESTABLISHED