

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code(s) CM-557H
Product name Black Ink w/ Heads-up Technology
Pure substance/mixture Mixture

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

Recommended Use ink
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Company Name

Kao Collins Inc.
1201 Edison Drive
Cincinnati, OH 45216
PH: 513-948-9000
Info@kaocollins.com
For further information, please contact

1.4. Emergency telephone number

Emergency telephone number Chemtrec 1-800-424-9300
Emergency Telephone International Chemtrec: +1 703-527-3887

Section 2: HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

2.2. Label elements

Product identifier
Hazard statements
H360D - May damage the unborn child

2.3. Other hazards

Causes mild skin irritation.

General Hazards

May cause skin and eye irritation. May cause irreversible damage to eyes.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS-No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Reg. No
Triethanolamine	EEC No. Present	102-71-6	1 - 5	Eye Irrit. 2 (H319)	No data available
Black Dye	Listed	-	1 - 5	No data available	No data available
Lactam	Listed	-	1 - 5	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Repr. 1B (H360D) STOT SE 3 (H335)	No data available
Ethyl alcohol	EEC No. Present	64-17-5	0.01 - <0.1	Flam. Liq. 2 (H225)	No data available

Full text of H- and EUH-phrases: see section 16

NOTE

Remaining components are either not hazardous or below threshold limits.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Inhalation	Call a physician immediately. Move to fresh air in case of accidental inhalation of vapors. If breathing is irregular or stopped, administer artificial respiration. None under normal use conditions. Get medical attention immediately if symptoms occur.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Drink 1 or 2 glasses of water.

4.2. Most important symptoms and effects, both acute and delayed**4.3. Indication of any immediate medical attention and special treatment needed**

Notes to Physician	Treat symptomatically.
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Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media**Suitable extinguishing media**

Use. Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foam.

Unsuitable extinguishing media

None

5.2. Special hazards arising from the substance or mixture

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Use personal protection recommended in Section 8.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.3. Methods and material for containment and cleaning up

Methods for containment

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

After cleaning, flush away traces with water.

6.4. Reference to other sections

See section 7 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling

Use personal protective equipment as required. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

Hygiene Measures

Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Glycol					TWA: 1000 mg/m ³
Triethanolamine 102-71-6				VLA-ED: 5 mg/m ³ VLA-ED	
1-Methyl-2-pyrrolidone 872-50-4		STEL: 309 mg/m ³ STEL: 75 ppm TWA: 103 mg/m ³ TWA: 25 ppm Skin	TWA: 40 mg/m ³ TWA: 10 ppm STEL: 80 mg/m ³ STEL: 20 ppm	S* VLA-EC: 75 ppm VLA-EC; 309 mg/m ³ VLA-EC VLA-ED: 25 ppm VLA-ED; 103 mg/m ³ VLA-ED	TWA: 20 ppm TWA: 82 mg/m ³ H*
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Triethanolamine		TWA: 5 mg/m ³	MAC: 5 mg/m ³ MAC	TWA: 5 ppm	TWA: 0.5 ppm

102-71-6					TWA: 3.1 mg/m ³
1-Methyl-2-pyrrolidone 872-50-4			MAC: 20 ppm MAC; 80 mg/m ³ MAC (fume)	TWA: 10 ppm TWA: 40 mg/m ³ STEL: 80 mg/m ³ STEL: 20 ppm Skin	TWA: 20 mg/m ³ TWA: 5 ppm
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Glycol		STEL: 2000 mg/m ³			
Triethanolamine 102-71-6	STEL 1.6 ppm STEL (inhalable fraction); 10 mg/m ³ STEL (inhalable fraction) MAK: 0.8 ppm MAK (inhalable fraction); 5 mg/m ³ MAK (inhalable fraction)	STEL: 20 mg/m ³		TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 5 mg/m ³
1-Methyl-2-pyrrolidone 872-50-4	Skin STEL 80 ppm STEL; 320 mg/m ³ STEL MAK: 20 ppm MAK; 80 mg/m ³ MAK (mists)	STEL: 40 ppm STEL: 160 mg/m ³	NDSch: 240 mg/m ³ NDS: 120 mg/m ³ Skin	TWA: 20 mg/m ³ TWA: 5 ppm Skin STEL: 10 ppm STEL: 30 mg/m ³	TWA: 101 mg/m ³ TWA: 25 ppm Skin

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas. Showers. Eyewash stations.

Personal Protective Equipment

Eye/Face Protection Tight sealing safety goggles. Wear safety glasses with side shields (or goggles). If splashes are likely to occur.

Hand protection For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection None under normal use conditions.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	Odor	slight amine
Appearance	Black	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No information available
Melting point / freezing point		No information available
Boiling point/range (°C) VALUE		No information available
Flash point	> 100 °C	Seta Closed Cup
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit:		No information available
Lower flammability limit:		No information available
Vapor pressure		No information available
Vapor density		No information available
Relative density	0.9 - 1.1	No information available
Water solubility		No information available
Solubility(ies)	Soluble in water	No information available
Partition coefficient		No information available

Autoignition temperature	>200 °C	No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity	< 15 cps	No information available
Explosive properties	No information available	
Oxidizing properties	No information available	
9.2. Other information		
Softening point	No information available	
Molecular weight	No information available	
VOC content	No information available	
Density	No information available	
Bulk density	No information available	

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Hazardous polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides.

Section 11: TOXICOLOGY INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information

The product has not been tested.

Inhalation

Inhalation of vapors in high concentration may cause irritation of respiratory system. May cause irritation of respiratory tract. Avoid breathing vapors or mists.

Eye contact

Contact with eyes may cause irritation. Avoid contact with eyes. May cause irreversible damage to eyes.

IF ON SKIN

May cause irritation. May discolor the skin. Avoid contact with skin.

Ingestion

May cause gastrointestinal discomfort if consumed in large amounts. May be harmful if swallowed. Do NOT taste or swallow.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 40,760.00 mg/kg

ATEmix (dermal) 91,019.00 mg/kg

ATEmix (inhalation-dust/mist) 120.70 mg/l

Unknown acute toxicity

22.295584 % of the mixture consists of ingredient(s) of unknown toxicity.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Triethanolamine	= 4190 mg/kg (Rat)	> 16 mL/kg (Rat) > 20 mL/kg (Rabbit)	
Lactam	= 3914 mg/kg (Rat)	= 8 g/kg (Rabbit)	> 5.1 mg/L (Rat) 4 h
Ethyl alcohol	= 7060 mg/kg (Rat)		= 124.7 mg/L (Rat) 4 h

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Sensitization No information available.

Mutagenic effects Contains: Black Dye. This material has tested positive in mutagenicity studies, however the relevance of these data to human health is uncertain.

Carcinogenic effects This product contains Ethanol which is classified as a possible carcinogen when ingested in the form of an alcoholic beverage. This is irrelevant as this product is used for ink jet ink applications not an alcoholic beverage.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects blood, Eyes, Skin, Gastrointestinal tract (GI).

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Not Established.

Contains 22.78637 % of components with unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Toxicity to Fish	Crustacea
Triethanolamine	216: 72 h Desmodesmus subspicatus mg/L EC50 169: 96 h Desmodesmus subspicatus mg/L EC50	450 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 1000: 96 h Pimephales promelas mg/L LC50 static 10600 - 13000: 96 h Pimephales promelas mg/L LC50 flow-through	1386: 24 h Daphnia magna mg/L EC50
Lactam	500: 72 h Desmodesmus subspicatus mg/L EC50	832: 96 h Lepomis macrochirus mg/L LC50 static 1400: 96 h Poecilia reticulata mg/L LC50 static 4000: 96 h Leuciscus idus mg/L LC50 static 1072: 96 h Pimephales promelas mg/L LC50 static	4897: 48 h Daphnia magna mg/L EC50
Ethyl alcohol		12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50	9268 - 14221: 48 h Daphnia magna mg/L LC50 2: 48 h Daphnia magna mg/L EC50 Static 10800: 24 h Daphnia magna mg/L EC50

		flow-through	
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12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical Name	Partition coefficient
Triethanolamine	-2.53
Lactam	-0.46
Ethyl alcohol	-0.32

12.4. Mobility in soil**Mobility in soil**

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods**Waste from residues/unused products**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated
14.5 Marine pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1 UN-No	Not Regulated
14.2 Proper shipping name	Not Regulated
14.3 Hazard Class	Not Regulated
14.4 Packing group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ADR

14.1 UN-No	Not Regulated
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14.2 Proper shipping name	Not Regulated
14.3 Hazard Class	Not Regulated
14.4 Packing group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA

14.1 UN-No	Not Regulated
14.2 Proper shipping name	Not Regulated
14.3 Hazard Class	Not Regulated
14.4 Packing group	Not Regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Lactam -	30.	

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

Component	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Triethanolamine 102-71-6 (1 - 5)	X	X	X	X	X	X	X	X
Black Dye (1 - 5)	X	X	X	X	X	X	X	X
Lactam (1 - 5)	X	X	X	X	X	X	X	X
Ethyl alcohol 64-17-5 (0.01 - <0.1)	X	X	X	X	X	X	X	X

Legend Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No information available

Section 16: OTHER INFORMATION**Full text of H-Statements referred to under section 3**

H319 - Causes serious eye irritation

H315 - Causes skin irritation

H360D - May damage the unborn child

H335 - May cause respiratory irritation

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

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Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Disclaimer

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End of Safety Data Sheet