

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

1.1. Product identifier

Product Code(s) TSK318203

Product name Sigma

Pure substance/mixture Mixture

Contains Propanol, Amines, coco alkyl, ethoxylated, compds. with hydrogen bis[2-[2-(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)diazenyl]benzoato(2-)-chromate(1-)](1:1), Propylene glycol propyl ether, Isopropyl alcohol

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

Serious eye damage/eye irritation	Category 1 - (H318)
Reproductive toxicity	Category 1B - (H360D)
Specific target organ toxicity (single exposure)	Category 3 - (H336)
Chronic aquatic toxicity	Category 2 - (H411)
Flammable Liquids	Category 2 - (H225)

2.2. Label elements

Product identifier

Contains Propanol, Amines, coco alkyl, ethoxylated, compds. with hydrogen bis[2-[2-(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)diazenyl]benzoato(2-)-chromate(1-)](1:1), Propylene glycol propyl ether, Isopropyl alcohol

**Signal word**

Danger

Hazard statements

H318 - Causes serious eye damage

H336 - May cause drowsiness or dizziness

H411 - Toxic to aquatic life with long lasting effects

H360D - May damage the unborn child

H225 - Highly flammable liquid and vapor

Contains Amines, coco alkyl, ethoxylated, compds. with hydrogen

bis[2-[2-(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)diazenyl]benzoato(2-)-chromate(1-)](1:1)

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)

P201 - Obtain special instructions before use

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P273 - Avoid release to the environment

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

P310 - Immediately call a POISON CENTER or doctor

P370 + P378 - In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam to extinguish

P391 - Collect spillage

2.3. Other hazards

May be harmful if swallowed. Toxic to aquatic life.

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
Ethyl alcohol	EEC No. Present	64-17-5	50 - 75	Flam. Liq. 2 (H225) Chronic Aquatic 2 (H411)	No data available
Propanol	EEC No. Present	71-23-8	1 - 25	Eye Dam. 1 (H318) STOT SE 3 (H336) Flam. Liq. 2 (H225)	No data available
Propylene glycol propyl ether	EEC No. Present	1569-01-3	1 - 10	Flam. Liq. 2 (H226) Eye Irrit. 2A (H319) STOT SE 3 (H335) STOT SE 3 (H336)	No data available
Isopropyl alcohol	EEC No. Present	67-63-0	1 - 5	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	No data available
Yellow Dye	Not Listed	-	0.1 - <1	Eye Irrit. 2B (H319) Skin Sens. 1 (H317) Repr. 1B (H360D)	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). Immediate medical attention is required. If symptoms persist, call a physician.
Inhalation	Remove to fresh air. If symptoms persist, call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Move to fresh air in case of accidental inhalation of vapors.
Skin Contact	Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Eye contact	If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Immediate medical attention is not required. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Remove all sources of ignition. Use personal protective equipment as required.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms Hives.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

Use. Carbon dioxide (CO₂). Dry chemical. Water spray, fog or alcohol-resistant foam.

Unsuitable extinguishing media

No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors

5.3. Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures**Personal precautions**

Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

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. Do not flush into surface water or sanitary sewer system. 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**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

6.4. Reference to other sections

See section 7 for more information.

Section 7: HANDLING AND STORAGE**7.1. Precautions for safe handling****Handling**

Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Hygiene Measures

When using do not eat or drink. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities**Storage**

Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, 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
Ethyl alcohol 64-17-5		TWA: 1000 ppm TWA: 1920 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 5000 ppm STEL: 9500 mg/m ³	VLA-ED: 1000 ppm VLA-ED; 1910 mg/m ³ VLA-ED	TWA: 200 ppm TWA: 380 mg/m ³
Propanol 71-23-8		STEL: 250 ppm STEL: 625 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³	S* VLA-EC: 400 ppm	

		TWA: 200 ppm TWA: 500 mg/m ³ Skin		VLA-EC; 1000 mg/m ³ VLA-EC VLA-ED: 200 ppm VLA-ED; 500 mg/m ³ VLA-ED	
Isopropyl alcohol 67-63-0		STEL: 1250 mg/m ³ STEL: 500 ppm TWA: 400 ppm TWA: 999 mg/m ³	STEL: 400 ppm STEL: 980 mg/m ³	VLA-EC: 500 ppm VLA-EC; 1250 mg/m ³ VLA-EC VLA-ED: 400 ppm VLA-ED; 998 mg/m ³ VLA-ED	TWA: 200 ppm TWA: 500 mg/m ³
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Ethyl alcohol 64-17-5		TWA: 1000 ppm	MAC: 500 ppm MAC; 1000 mg/m ³ MAC	TWA: 1900 mg/m ³ TWA: 1000 ppm STEL: 2500 mg/m ³ STEL: 1300 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³
Propanol 71-23-8		STEL: 250 ppm STEL: 400 ppm TWA: 200 ppm		TWA: 200 ppm TWA: 500 mg/m ³ STEL: 250 ppm STEL: 620 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ Skin
Isopropyl alcohol 67-63-0		STEL: 500 ppm STEL: 400 ppm TWA: 200 ppm	MAC: 250 ppm MAC; 650 mg/m ³ MAC	TWA: 500 mg/m ³ TWA: 200 ppm STEL: 620 mg/m ³ STEL: 250 ppm	TWA: 200 ppm TWA: 490 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Ethyl alcohol 64-17-5	STEL 2000 ppm STEL; 3800 mg/m ³ STEL MAK: 1000 ppm MAK; 1900 mg/m ³ MAK	STEL: 1000 ppm STEL: 1920 mg/m ³	NDS: 1900 mg/m ³	TWA: 500 ppm TWA: 950 mg/m ³ STEL: 1187.5 mg/m ³ STEL: 625 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³
Propanol 71-23-8	MAK: 200 ppm MAK; 500 mg/m ³ MAK		NDSCh: 600 mg/m ³ NDS: 200 mg/m ³ Skin	TWA: 100 ppm TWA: 245 mg/m ³ Skin STEL: 150 ppm STEL: 306.25 mg/m ³	TWA: 200 ppm TWA: 500 mg/m ³ STEL: 250 ppm STEL: 625 mg/m ³ Skin
Isopropyl alcohol 67-63-0	STEL 800 ppm STEL; 2000 mg/m ³ STEL MAK: 200 ppm MAK; 500 mg/m ³ MAK	STEL: 400 ppm STEL: 1000 mg/m ³	NDSCh: 1200 mg/m ³ NDS: 900 mg/m ³ Skin	TWA: 100 ppm TWA: 245 mg/m ³ STEL: 150 ppm STEL: 306.25 mg/m ³	TWA: 200 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.

Personal Protective Equipment

- Eye/Face Protection** Tight sealing safety goggles. Face protection shield.
- Hand protection** For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.
- Skin and body protection** Antistatic boots. Wear fire/flammable resistant/retardant clothing. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn. Suitable protective clothing. Apron.
- Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	Odor	solvent
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 / boiling range	> 75 °C	No information available
Flash point	< 17 °C	Seta Closed Cup
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit:		11.5 (volume % in Air)
Lower flammability limit:		1.8 (volume % in Air)
Vapor pressure		No information available
Vapor density		No information available
Relative density	0.700 - 0.900	No information available
Water solubility		No information available
Solubility(ies)	partly miscible	No information available
Partition coefficient		No information available
Autoignition temperature		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
Liquid 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

Heating in air. Heat, flames and sparks.

10.5. Incompatible materials

Strong oxidizing agents. Acids. Chlorinated compounds. Strong acids.

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	Avoid breathing vapors or mists. May cause drowsiness and dizziness.
Eye contact	Avoid contact with eyes. Causes serious eye damage.
IF ON SKIN	Avoid contact with skin. May cause irritation. May cause sensitization by skin contact.
Ingestion	Do NOT taste or swallow. May be harmful if swallowed.

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

ATEmix (oral)	4,421.80 mg/kg
ATEmix (dermal)	13,772.60 mg/kg
ATEmix (inhalation-dust/mist)	193.00 mg/l
ATEmix (inhalation-vapor)	185.17 mg/l

Unknown acute toxicity

- 8.8815 % of the mixture consists of ingredient(s) of unknown toxicity.
- 8.8815 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
- 8.8815 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
- 8.8815 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
- 8.8815 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
- 8.8815 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl alcohol	= 7060 mg/kg (Rat)		= 124.7 mg/L (Rat) 4 h
Propanol	= 1870 mg/kg (Rat)	= 4049 mg/kg (Rabbit)	> 13548 ppm (Rat) 4 h
Propylene glycol propyl ether	= 2490 mg/kg (Rat) = 2504 mg/kg (Rat)	= 3550 mg/kg (Rabbit)	
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m ³ (Rat) 4 h

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	Risk of serious damage to eyes. Irritating to eyes.
Sensitization	May cause an allergic skin reaction.
Mutagenic effects	No information available.
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	May cause harm to the unborn child. Possible risk of harm to the unborn child. May impair

fertility. Possible risk of impaired fertility.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Target organ effects

liver, blood, Eyes, Skin, Central Nervous System (CNS), blood, Reproductive System, Gastrointestinal tract (GI), kidney, hematopoietic system.

Aspiration hazard

No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxic to aquatic life Toxic to aquatic life with long lasting effects

Ecotoxicity effects

Not Established. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Contains 8.8815 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Toxicity to Fish	Crustacea
Ethyl alcohol		13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through 12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static	2: 48 h Daphnia magna mg/L EC50 Static 9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50
Propanol		4480: 96 h Pimephales promelas mg/L LC50 flow-through	3339 - 3977: 48 h Daphnia magna mg/L EC50 Static 3642: 48 h Daphnia magna mg/L EC50
Propylene glycol propyl ether		100: 96 h Oncorhynchus mykiss mg/L LC50 static	
Isopropyl alcohol	1000: 96 h Desmodemus subspicatus mg/L EC50 1000: 72 h Desmodemus subspicatus mg/L EC50	1400000: 96 h Lepomis macrochirus µg/L LC50 9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static	13299: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Partition coefficient
Ethyl alcohol	-0.32
Propanol	0.34
Isopropyl alcohol	0.05

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	Dispose of as hazardous waste in compliance with local and national regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Other Information	According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION**IMDG/IMO**

14.1 UN-No	UN1210
14.2 Proper shipping name	Printing Ink, Flammable
14.3 Hazard Class	3
14.4 Packing group	II
14.5 Marine pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL 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	UN1210
14.2 Proper shipping name	Printing Ink, Flammable
14.3 Hazard Class	3
14.4 Packing group	II
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA

14.1 UN-No	UN1210
14.2 Proper shipping name	Printing Ink, Flammable
14.3 Hazard Class	3
14.4 Packing group	II
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)

Persistent Organic Pollutants

Not applicable

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

International Inventories

Component	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Ethyl alcohol 64-17-5 (50 - 75)	X	X	X	X	X	X	X	X
Propanol 71-23-8 (1 - 25)	X	X	X	X	X	X	X	X
Propylene glycol propyl ether 1569-01-3 (1 - 10)	X	X	X	X	X	X	X	X
Isopropyl alcohol 67-63-0 (1 - 5)	X	X	X	X	X	X	X	X
Yellow Dye (0.1 - <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**

H225 - Highly flammable liquid and vapor

H226 - Flammable liquid and vapor

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H320 - Causes eye irritation

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness
 H360D - May damage the unborn child
 EUH066 - Repeated exposure may cause skin dryness or cracking

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

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet