1. IDENTIFICATION OF PRODUCT AND COMPANY

Product Name	:	**70000-00018 Ink, black, UV-curable**
Use of the substance/preparation:		**Ink for industrial ink jet printers (CIJ-printers)**
Supplier	:	**Paul Leibinger GmbH & Co. KG**
Distributor	:	Redemac Inc. 3540 Rue Griffith Ville Saint-Laurent (QC) H4T 1 A7 Phone : 888-335-9570 Fax : 887-735-4087 www.redemac.com www.leibinger-group.com
Emergency phone (for Transport & Environment)	:	**+44 (0) 1235 239 670 (24h service)**

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Flam. Liq. 2, H225
Eye Irrit. 2, H319
STOT SE 3, H336
Aquatic Chronic 3, H412

Classification according to Directive 1999/45/EC [DPD]
The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification:	F; R11 Xi; R36, R66, R67; R52/53 N; R51/53
Physical/chemical hazards :	Highly flammable.
Human health hazards :	Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
Environmental hazards :	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R-phrases declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms:

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness and dizziness.
Harmful to aquatic life with long lasting effects.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Avoid breathing vapor. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations

Hazardous ingredients: butanone
7-oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate

2.3 Other hazards

Other hazards which do not result in classification: None known

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / mixture: Mixture

Chemical name	CAS No	EC No	[% weight]	Classification 67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]
butanone	78-93-3	201-159-0	50 < 80	F; R11 Xi; R36, R66, R67 **[1] [2]**	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
7-oxabicyclo[4.1.0] hept-3-ylmethyl 7-oxabicyclo[4.1.0] heptane-3-carboxylate	2386-87-0	219-207-4	25<50	R43	Skin Sens. 1, H317
reaction mass of: thiobis(4,1-phenylene)-S,S,S',S'-tetraphenyldisulfonium bishexafluorophosphate; diphenyl(4-phenylthio	104558-95-4	-	5<10	Xi; R36 R43 N; R50/53 **[1]**	Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
butane diol monovinyl ether	17832-28-9	241-793-5	5<10	Xi; R36 **[1]**	Eye Irrit. 2, H319
propylene carbonate	108-32-7	203-572-1	1<2,5	Xi; R36 **[1]**	Eye Irrit. 2, H319
				See Section 16 for the full text of the Rphrases declared above.	**See Section 16 for the full text of the H statements declared above.**

See section 16 for the full text of the R-phrases declared above

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been

assigned a workplace exposure limit and hence require reporting in this section.
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General: In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with room temperature water for at least 15 minutes, keeping eyelids open. In case of accidental eye contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of the eyes.

Inhalation: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel..

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do not use solvents or thinners. In case of accidental skin contact, avoid concurrent exposure to the sun or other sources of UV light which may increase the sensitivity of skin

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.
Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.
If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate, methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate. May produce an allergic reaction.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to medical doctor: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use dry chemical, CO_2, water spray (fog) or foam.
Unsuitable extinguishing media: Do not use water jet

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen

5.3 Advice for firefighters

Special protective actions for fire-fighters: Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters: Appropriate breathing apparatus may be required.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional information on hygiene measures.

6.2 Environmental precautions: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and materials for containment and cleaning up: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Preferably clean with a detergent. Avoid using solvents.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

Use only in well-ventilated areas.
Avoid contact with skin and eyes.
Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture.
Keep container tightly closed.
Keep away from heat, sparks and flame.
Always keep in containers made from the same material as the original one.
Put on appropriate personal protective equipment (see Section 8).
Never use pressure to empty. Container is not a pressure vessel.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Comply with the health and safety at work laws.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations.
Store between the following temperatures: 5 - 30 °C
Keep away from heat and direct sunlight.

Notes on joint storage

Keep away from: oxidizing agents, strong alkalis, strong acids.

Additional information on storage conditions
Observe label precautions.
Store in a dry, cool and well-ventilated area.
Keep away from heat and direct sunlight.
Keep container tightly closed.
Keep away from sources of ignition. No smoking.
Prevent unauthorized access.
Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Keep only in the original container.
Keep away from heat and direct sunlight.

7.3 Specific end use(s)
Recommendations : Not available.
Industrial sector specific solutions: Not available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Occupational exposure limits:

Ingredient name	Occupational exposure limits
butanone	**EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values. Skin** STEL: 900 mg/m³ 15 minute(s). STEL: 300 ppm 15 minute(s). TWA: 600 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s).

Recommended monitoring procedures:
If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls
Appropriate engineering controls:
Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn.

Individual protection measures:

Hygiene measures :
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection
Use safety eyewear designed to protect against splash of liquids.

Skin protection / Hand protection:
Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves:
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection:
Personnel should wear antistatic clothing made of natural fibers or of high- temperature-resistant synthetic fibers.

Respiratory protection:
If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators

Environmental exposure controls:

Do not allow to enter drains or watercourses

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid.
Color:	black
Odor:	Characteristic
Flash point:	<6°C
Lower explosion limit:	Lower: 1.8%
	Upper: 11,5%
VOC :	56%
Boiling point :	Lowest known value: 80°C (175°F)
Upper/lower flammability or explosive limits: :	Lower: 1.8% Upper: 11.5%
Vapor pressure :	10.5 kPa (78.75 mm Hg)
Vapor density :	2.41 [Air = 1]
Relative density :	Not tested
Solubility(ies) :	Not tested
Auto-ignition temperature:	404°C (760°F)
Decomposition temperature:	Not applicable
Viscosity:	Not tested
Explosive properties:	Not applicable.
Oxidizing properties:	Not applicable.

9.2 Other information

No additional information.

10. STABILITY AND REACTIVITY

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Hazardous reactions or instability may occur under certain conditions of storage or use.

10.3 Possibility of hazardous reactions: under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: This mixture contains materials which are unstable under the following conditions: exposure to heat, strong UV sources. These could cause the product to polymerize exothermically. Unintentional contact with them should be avoided.

10.5 Incompatible materials: Keep away from: free radical initiators, peroxides, strong alkalis, reactive metals.

10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced
Hazardous polymerization: May polymerize on exposure to sunlight.

11. TOXICOLOGICAL INFORMATION

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.
Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc. May cause allergic skin reactions with repeated exposure.
If splashed in the eyes, the liquid may cause irritation and reversible damage.
The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
Ingestion may cause nausea, weakness and central nervous system effects.

Contains 7-oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate, reaction mass of: thiobis(4, 1-phenylene)-S,S,S',S'-tetraphenyldisulfonium bishexafluorophosphate; diphenyl(4-phenylthio. May produce an allergic reaction.

The following products have sensitizing properties: 7-oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane- 3-carboxylate, reaction mass of: thiobis(4,1-phenylene)-S,S,S',S'-tetraphenyldisulfonium bishexafluorophosphate; diphenyl(4-phenylthio. Cases of hypersensitivity may occur, possibly with cross-sensitization to other acrylate materials.

11.1 Information on toxicological effects

Acutetoxicity

Product/ingredient name	Result	Species	Dose	Exposure
Butanone	LD50 Dermal	Rabbit	6480mg/kg	-
	LD50 Oral	Rat	2737mg/kg	-
7-oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0] heptane-3-carboxylat	LD50 Oral	Rat	4490mg/kg	-
propylene carbonate	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion
Not determined - Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]]
Sensitization
Not determined - Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Mutagenicity
Not applicable.
Carcinogenicity
Not applicable.
Reproductive toxicity:
Not determined - Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Teratogenicity:
Not applicable

12. ECOLOGICAL INFORMATION

There are no data available on the mixture itself. Do not allow to enter drains or watercourses.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

12.1 Toxicity

Butanone

Acute LC50 >520000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
Acute LC50 >400 ppm Marine water	Fish - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
Chronic NOEC <70000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
Chronic NOEC 400 ppm Marine water	Fish - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours

12.2 Persistence and degradability: Not available.

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
butanone	0.3	-	low
7-oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate	1.34	-	low
butane diol monovinyl ether	0.43	-	low
propylene carbonate	-0.41	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.
Mobility: Not available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

12.6 Other adverse effects: No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Do not allow to enter drains or watercourses.
Dispose of according to all federal, state and local applicable regulations.
If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.
For further information, contact your local waste authority.

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Packaging

Methods of disposal

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

European Waste Catalogue (EWC): 08 03 12 waste ink containing dangerous substances

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA-DGR
14.1. UN number	1210	1210	1210
14.2. UN proper shipping name	PRINTING INK (butanone)	PRINTING INK (butanone)	Printing ink (butanone)
14.3. Transport hazard class(es)	3	3	3
14.4. Packing group	II	II	II
14.5. Environmental hazards	Yes	Yes	Yes

Additional Information: **Special provisions** 640 (C)
Tunnel code (D/E)

14.6. Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No information available.

15. REGULATORY INFORMATION

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Substances of very high concern:

None of the components are listed

Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:
Not applicable

Other EU regulations

Industrial use: The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work

15.2 Chemical Safety Assessment:

This product contains substances for which Chemical Safety Assessments are still to be received

16. OTHER INFORMATION

CEPE Classification : 4

Abbreviations and acronyms :
ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Full text of abbreviated H statements:
H225 Highly flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness and dizziness.
H400 Very toxic to quatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]:
Aquatic Acute 1, H400 AQUATIC HAZARD (ACUTE) - Category 1
Aquatic Chronic 1, H410 AQUATIC HAZARD (LONG-TERM) - Category 1
Aquatic Chronic 2, H411 AQUATIC HAZARD (LONG-TERM) - Category 2
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3

Full text of R-phrases referred to in sections 2 and 3:

R11- Highly flammable.
R36- Irritating to eyes.
R43- May cause sensitization by skin contact.
R66- Repeated exposure may cause skin dryness or cracking.
R67- Vapors may cause drowsiness and dizziness.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD]:

F - Highly flammable
Xi - Irritant
N - Dangerous for the environment

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.