

According to Regulation (EC) No. 1907/2006 as amended by (ED) No. 1272/2008

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1** **Product Code:** 51-0027-01
Product Name: INK, MEK FLEX BLACK
- 1.2** **Relevant Identified uses of the substance or mixture and uses advised against:**
- 1.3** **Details of the Supplier of the Safety Data Sheet**
- | | | | |
|---------------------|--|--------------|------------------|
| Company Name | BestCode | | |
| Address | 3034 SE Loop 820
Fort Worth, Texas, 76149 | | |
| Website | www.bestcode.co | Email | info@bestcode.co |
| Phone | 817-349-8555 | Fax | 817-349-8480 |
- 1.4** **Emergency Telephone Number**
- | | | | |
|--------------------------|---------|-----------------------|-----------------|
| Emergency Contact | Chemtel | Toll Free: | 1-800-255-3924 |
| | | International: | 01-813-248-0585 |

Section 2. Hazards Identification

- 2.1** **Classification of the Substance or Mixture:**
- 2.1.1** **Classification according to Regulation (EC) No 1272/2008 [CLP]:**
- Flammable Liquids, Category 2
 Serious Eye Damage/Eye Irritation, Category 2
 Specific Target Organ Toxicity (single exposure), Category 3
- 2.2** **Label Elements:**
- 2.2.1** **Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



GHS Signal Word: **Danger**

GHS Hazard Phrases:

H225 - Highly flammable liquid and vapor.
 H319 - Causes serious eye irritation.
 H335 - May cause respiratory irritation.

GHS Precaution Phrases:

P233 - Keep container tightly closed.
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P240 - Ground/bond container and receiving equipment.
 P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.
 P243 - Take precautionary measures against static discharge.
 P242 - Use only non-sparking tools.
 P264 - Wash hands thoroughly after handling.
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 P271 - Use only outdoors or in a well-ventilated area.

GHS Response Phrases:

P370+378 - In case of fire, use ... to extinguish.
 P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P337+313 - If eye irritation persists, get medical advice/attention.

P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 - Call a POISON CENTER/doctor/... if you feel unwell.

GHS Storage and Disposal Phrases:

P403+235 - Store in cool/well-ventilated place.

P501 - Dispose of contents/container to

P403+233 - Store container tightly closed in well-ventilated place - if product is as volatile as to generate hazardous atmosphere.

P405 - Store locked up.

2.3 Adverse Human Health Effects and Symptoms:

Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen. Chronic overexposure to vapors may cause lung damage. Animals exposed to 4300 ppm (mice) and 2000 ppm (guinea pig), 6 hours/day for 7 days developed minor blood changes & loss of appetite. There was no indication of liver or kidney injury. Rabbits exposed to 16000 mg/m³ (4440 ppm), 1 hour/day for 40 days developed secondary anemia (decreased number of red blood cells), decreased hemoglobin levels, increased numbers of macrophages, congestion and fatty degeneration of various organs, and enlargement of the spleen. A reviewer suggested that the organ damage may have been due to impurities present in the ethyl.

2.3.1 Inhalation:

Causes respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness. May cause central nervous system effects such as nausea and headache. Neurobehavioural effects of exposure to MEK (200 ppm for 4 hrs) were studied with 137 volunteers. There were no statistically significant effects observed in biochemical, psychomotor, sensorimotor and psychological tests. May cause respiratory tract irritation. Inhalation of high concentrations may cause narcotic effects. May be harmful if inhaled.

2.3.2 Skin Contact:

May be absorbed through the skin in harmful amounts. Repeated or prolonged exposure may cause drying and cracking of the skin. Only one human case of skin sensitization was located. Negative results were obtained in an animal test; MEK did not produce skin sensitization in the mouse ear thickness test. May cause skin irritation. The majority of human studies have demonstrated that ethyl acetate does not cause an allergic response on human skin. However, there is one case report of a woman developing a skin allergy to ethyl acetate.

2.3.3 Eye Contact:

Causes eye irritation. Vapors may cause eye irritation. Animal evidence suggests that MEK is a moderate to severe eye irritant.

2.3.4 Ingestion:

May cause irritation of the digestive tract. Possible aspiration hazard. May cause central nervous system depression. Animal evidence suggests that MEK can be aspirated (inhaled) into the lungs during ingestion or vomiting. Ingestion of large amounts may cause central nervous system depression. May cause headache, nausea, fatigue, and dizziness. These effects may be caused in part by ethanol which is released when ethyl acetate is broken down in the body.

Section 3. Composition/Information on Ingredients

CAS #	Hazard components (Chemical Name)/ Reach Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
78-93-3	Methyl Ethyl Ketone	60.0-90.0%	201-159-0 606-002-00-3	Flam. Liq. 2: H225 Eye Damage 2: H319 STOT (SE) 3: H335 H336
141-78-6	Acetic Acid, ethyl ester	1.0-5.0%	205-500-4 607-022-00-5	Flam. Liq. 2: H225 Eye Damage 2: H319 STOT (SE) 3: H335 H336

Section 4. First Aid Measures

Description of First Aid Measures:

In Case of Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
In Case of Skin Contact:	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
In Case of Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
In Case of Ingestion:	Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Get medical aid.
Note for the Doctor:	Treat symptomatically and supportively.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:	In case of fire, use carbon dioxide, dry chemical powder or appropriate foam. Water may be ineffective because it will not cool material below its flash point. Water may be ineffective. Use water spray, alcohol foam, CO ₂ , dry chemical.		
5.2 Flammable Properties and Hazards:			
Flash Point:	> -7.00 C	Method Used:	Estimate
Explosive Limits:	LEL:		UEL:
Autoignition Point:	> 404.00C		
5.3 Fire Fighting Instructions:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Vapors may form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor.		

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:	
6.2 Environmental Precautions:	
6.3 Methods and Material for Containment and Cleaning Up:	Use proper personal protective equipment as indicated in Section 8. Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Avoid runoff into storm sewers and ditches which lead to waterways. Use only non-sparking tools and equipment.

Section 7. Handling and Storage

7.1 Precautions to be taken when Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing
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Safety Data Sheet

Part Number: 51-0027-01

Name: INK, MEK FLEX BLACK

Date:6/9/15

- 7.2 Precautions to be Taken in Storing:** vapor. Avoid breathing dust, mist, or vapor.
Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store in a tightly closed container.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters

CAS#	Partial Chemical Name	Britain EH40	France VL	Europe
78-93-3	Methyl Ethyl Ketone	TWA: 600 mg/m3 (200 ppm) STEL: 899 mg/m3 (300 ppm)	TWA: 600 mg/m3 (200 ppm) STEL: 900 mg/m3 (300 ppm)	TWA: 600 mg/m3 STEL: 900 mg/m3
141-78-6	Acetic acid, ethyl ester	TWA: (200 ppm) STEL: (400 ppm)	TWA: 1400 mg/m3 (400 ppm)	

CAS#	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
78-93-3	Methyl Ethyl Ketone	PEL: 200 ppm	TLV: 200 ppm STEL: 300 ppm	
141-78-6	Acetic acid, ethyl ester	PEL: 400 ppm	TLV: 400 ppm	

8.2 Exposure Controls

- 8.2.1 Engineering Controls:**
(Ventilation etc.): Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.
- 8.2.2 Personal Protection Equipment:**
Eye Protection: Wear chemical splash goggles.
Protective Gloves: Wear appropriate protective gloves to prevent skin exposure.
Other Protective Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respiratory Equipment
(Specify Type): Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States:	[] Gas	[X] Liquid	[] Solid
Appearance and Odor:	Dark. solvent odor.		
Melting Point:	-87.00 C - -83.00 C		
Boiling Point:	77.00 C		
Flash Pt:	> -7.00 C	Method Used:	Estimate
Evaporation Rate:	4.6 (BuAC=1)		
Explosive Limits:	LEL:		UEL:
Vapor Pressure (vs. Air or mm Hg):	85 MM_HG at 20.0 C		
Vapor Density (vs. Air = 1):	> Air		
Specific Gravity (Water = 1):	.876		
Density:	~ 7.19 LB/GA		
Solubility in Water:	Miscible		
Autoignition Pt:	> 404.00 C		

9.2 Other Information

Percent Volatile: > 74.0 % by volume.

Section 10. Stability and Reactivity

10.1	Reactivity	
10.2	Stability	Unstable [] Stable [X]
10.3	Conditions To Avoid - Hazardous Reactions:	
	Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
10.4	Conditions to Avoid - Instability	Ignition sources, excess heat, moisture, attacks some plastics, rubber, and coatings.
10.5	Incompatibility – Materials to Avoid	Strong oxidizing agents, Strong acids, 2-propanol, Strong bases.
10.6	Hazardous Decomposition or Byproducts:	Carbon monoxide, Carbon dioxide, ethyl alcohol.

Section 11. Toxicological Information

11.1	Information of Toxicological Effects:	
	Carcinogenicity/Other Information:	CAS# 78-93-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 141-78-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
	Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1	Toxicity:	Environmental: Substance evaporates in water with T1/2= 3D (rivers) to 12D (lakes). Substance is not expected to bioconcentrate in marine life. Physical: Substance photodegrades in air with T1/2 = 2.3 days. Oxidizes rapidly by photo-chemical reactions in air. Readily biodegradable meeting the 10 day window criterion. Not expected to bioaccumulate significantly. Terrestrial: Expected to have high mobility in soil. Volatilization of ethyl acetate from moist soil surfaces is expected to be important. Aquatic: Not expected to adsorb into suspended solids or sediments. Atmospheric: Expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase ethyl acetate is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 10 days. Physical: Substance biodegrades at a high rate with little bioconcentration.
12.2	Persistence and Degradability:	
12.3	Bioaccumulative Potential:	
12.4	Mobility in Soil:	
12.5	Results of PBT and vPvB assessment:	

Section 13. Disposal Considerations

13.1	Waste Disposal Method:	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: CAS# 78-93-3: waste number U159 (Ignitable waste, Toxic waste). CAS# 141-78-6: waste number U112 (Ignitable waste).
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Section 14. Transport Information

GHS Classification Flammable Liquids, Category 2 - Danger! Highly flammable liquid and vapor
 Serious Eye Damage/Eye Irritation, Category 2 - Warning! Causes serious eye irritation
 Specific Target Organ Toxicity (single exposure), Category 3 - Warning! May cause respiratory irritation, or may cause drowsiness and dizziness

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]

DOT Hazard Class: 3 FLAMMABLE LIQUID
UN/NA Number: UN 1210 **Packing Group:** II

14.2 LAND TRANSPORT (Canadian TDG):

UN Number 1210 **Packing Group:** II
Hazard Class 3 – FLAMMABLE LIQUID **TDG Classification:**

14.3 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name:
UN Number 1210 **Packing Group:** II
Hazard Class 3 – FLAMMABLE LIQUID

14.4 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]

Section 15. Regulatory Information

Canadian WHMIS Classification:

CLASS B, DIVISION 2: Flammable Liquids
 CLASS D, DIVISION 2, SUBDIVISION B: Toxic Materials (Mutagenicity, skin sensitization, irritation, etc.)

Section 16. Other Information

Revision Date: 6/9/15

Additional Information About this Product:

Company Policy or Disclaimer

The information and recommendations contained herein are, to the best of BestCode's knowledge and belief, accurate and reliable as of the date issued. Because many factors may affect processing or application/use, BestCode recommends that you make tests to determine the suitability of a product for your particular purpose prior to use. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by BestCode hereunder are given gratis and BestCode assumes no obligation or liability for the description, designs, data and information given or results obtained. All such being given and accepted at your risk.