

Safety Data Sheet

Product Number: 50-0001-01
Product Name: Cleaner, MEK

Date: 11/14/2019
Revision: B

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) 2015/830

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product Name: Cleaner, MEK
Product Code: 50-0001-01

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

Product Use: Printing ink for use in BestCode CIJ

1.3 Details of the supplier of the safety data sheet

BestCode
3034 SE Loop 820
Fort Worth, TX 76140
817-349-8555

For further information, please contact Customer Service:

Customer Service: 817-349-8555
Email: Info@Bestcode.co

1.4 Emergency telephone number

Emergency Contact: Local Poison Information Center
Chem Tel. Inc. Toll Free 800-255-3924
International 813-248-0585

Section 2: Hazards identification

2.1 Classification of the mixture in accordance with Article 40 of Regulation (EC) No 1272/2008

GHS Rating:

Flammable Liquids, Category 2
Serious Eye Damage/Eye Irritation, Category 2
Specific Target Organ Toxicity (single exposure), Category 3

2.2 Label elements



Signal word: Danger

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Hazard statements:

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

Precautionary statements:

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/vapors/spray.
P271 - Use only outdoors or in a well-ventilated area.
P370+378 - In case of fire, use carbon dioxide, dry chemical powder or appropriate foam 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.
P403+235 - Store in cool/well-ventilated place.
P501 - Dispose of contents/container in accordance with local regulations.
P403+233 - Store container tightly closed in well-ventilated place.
P405 - Store locked up.

2.3 Other Hazards

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.

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.



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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.

Eye Contact:

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

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.

Section 3: Composition/information on ingredients

3.1 Substances:

3.2 Mixtures:

CAS #	EC #	Hazardous components / REACH Registration No.	Concentration	GHS Classification
78-93-3	201-159-0	Methyl Ethyl Ketone	60.0 – 100.0%	Flam. Liq. 2: H225; Eye Irrit. 2: H319; STOT SE 3: H336; EUH066

Section 4: First Aid Measures

4.1 Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.

Skin: 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.

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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.

4.2 Most Important symptoms and effects, both acute and delayed

Inhalation	No Data Available
Eye contact	No Data Available
Skin contact	No Data Available
Ingestion	No Data Available

4.3 Indication of any immediate medical attention and special treatment needed

Notes to doctor: Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

5.1 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.

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters

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.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Evacuate



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6.1.2 For emergency responders

Use proper personal protective equipment as indicated in Section 8.

6.2 Environmental Precautions

Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

6.3.1 For Containment:

Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

6.3.2 Clean up and disposal of spill:

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.

Section 7: Handling and storage

7.1 Precautions for safe 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 vapor.

7.2 Conditions for safe storage, including any compatibilities

Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

7.3 Specific end use(s)

Fluid delivery to BestCode Series 8 CIJ. Follow safety instructions outlined in 7.1 & 7.2 while handling. Observe warnings provided with BestCode Series 8 CIJ system when installing and handling fluids.

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Section 8: Exposure control/personal protection

8.1 Control parameters

CAS #	Hazardous components	ACGIH TLV	Australia	Austria
78-93-3	Methyl Ethyl Ketone	TLV: 200 ppm STEL: 300 ppm	TWA: 295 mg/m ³ (100 ppm) STEL: 590 mg/m ³ (200 ppm)	TWA: 445 mg/m ³ (150 ppm) STEL: 890 mg/m ³ (300 ppm)

CAS #	Hazardous components	Belgium OEL	California, USA	Ontario, CA
78-93-3	Methyl Ethyl Ketone	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)	TWA: 590 mg/m ³ (200 ppm) STEL: 885 mg/m ³ (300 ppm)	TWA: 200 ppm STEL: 300 ppm

CAS #	Hazardous components	China	Québec, CA	German AGS
78-93-3	Methyl Ethyl Ketone	TWA: 300 mg/m ³ STEL: 600 mg/m ³ (15 min)	TWA: 150 mg/m ³ (50 ppm) STEL: 300 mg/m ³ (100 ppm)	TWA: 600 mg/m ³ (200 ppm) STEL: 600 mg/m ³ (200 ppm) (15 min)

CAS #	Hazardous components	Germany MAK/TRK	Denmark OEL	Spain OEL
78-93-3	Methyl Ethyl Ketone	TWA: 295 mg/m ³ (100 ppm) STEL: 600 mg/m ³ (200 ppm) (30min) (4x)	TWA: 145 mg/m ³ (50 ppm) STEL: 290 mg/m ³ (100 ppm)	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)

CAS #	Hazardous components	Europe	Finland OEL	France VL
78-93-3	Methyl Ethyl Ketone	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)	STEL: 300 mg/m ³ (100 ppm) (15 min)	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)

CAS #	Hazardous components	Hungary OEL	Ireland OEL	Italy OEL
78-93-3	Methyl Ethyl Ketone	TWA: 600 mg/m ³ STEL: 900 mg/m ³	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm) (15 min)	TWA: 600 mg/m ³ (200 ppm) STEL: 900 mg/m ³ (300 ppm)

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CAS #	Hazardous components	South Korea	Latvia OEL	Mexico OEL
78-93-3	Methyl Ethyl Ketone	TWA: 590 mg/m ³ (200 ppm) STEL: 885 mg/m ³ (300 ppm)	TWA: 200 mg/m ³ (67 ppm) STEL: 900 mg/m ³ (300 ppm) (15 min)	TWA: 590 mg/m ³ (200 ppm) STEL: 885 mg/m ³ (300 ppm)

CAS #	Hazardous components	Malaysia OEL	NIOSH	Netherlands OEL
78-93-3	Methyl Ethyl Ketone	TWA: 590 mg/m ³ (200 ppm)	TWA: 200 ppm STEL: 300 ppm	TWA: 590 mg/m ³ STEL: 900 mg/m ³

CAS #	Hazardous components	New Zealand	OSHA PELs	Poland
78-93-3	Methyl Ethyl Ketone	TWA: 445 mg/m ³ (150 ppm) STEL: 890 mg/m ³ (300 ppm)	PEL: 200 ppm	TWA: 450 mg/m ³ STEL: 900 mg/m ³

CAS #	Hazardous components	Sweden OEL	Singapore	Britain EH40
78-93-3	Methyl Ethyl Ketone	TWA: 150 mg/m ³ (50 ppm) STEL: 300 mg/m ³ (100 ppm) (15 min)	TWA: 590 mg/m ³ (200 ppm) STEL: 885 mg/m ³ (300 ppm)	TWA: 600 mg/m ³ (200 ppm) STEL: 899 mg/m ³ (300 ppm)

CAS #	Hazardous components	Switzerland OEL	Japan OEL	
78-93-3	Methyl Ethyl Ketone			

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

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.

8.2.2 Individual protection measures, such as personal protective equipment

Wear appropriate protective clothing to prevent skin exposure. Choose body protection according to the amount and concentration of the dangerous substance at the work place.



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- Eye/Face protection:** Wear chemical splash goggles.
- Skin protection:** Wear appropriate protective gloves to prevent skin exposure.
- Respiratory protection:** 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.
- Hygienic Practices:** DO NOT SMOKE IN WORK AREA! Promptly remove contaminated clothing. Wash immediately if skin becomes contaminated. Do not eat or drink in work area while using this product. Wash thoroughly at the end of the workday, before eating and using the restroom.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid (Upon aging, clear or colorless fluids may develop a slight yellow tint which will not affect the product performance).		
Odor:	Solvent	Odor threshold:	No data available
pH:	No data available	Melting point:	-87.00C
Boiling range:	80.00 C	Flash point:	-7°C
Evaporation rate:	5.8 (BuAC=1)	Upper Explosive Limit:	
		Lower Explosive Limit:	
Flammability:	No data available	Vapor Pressure:	~ 94.5 MM_HG at 20.0 C
Vapor density:	> Air	Relative Density:	-0.805
Solubility(ies):	Miscible	Partition coefficient n-octanol/water:	No data available
Auto-ignition temperature:	404.00 C	Decomposition temperature:	No data available
Viscosity:	No data available		
Explosive properties:	> 99.999% Volatile by volume.		
Oxidizing properties:	No data available		

9.2 Other information:

Miscibility:	No data available	VOC:	No data available
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Section 10: Stability and reactivity

10.1 Reactivity

No data available.

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10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Will not occur

10.4 Conditions to avoid:

Ignition sources, Excess heat.

10.5 Incompatible materials:

Strong oxidizing agents, Strong acids, 2-propanol

10.6 Hazardous decomposition products

Carbon monoxide, Carbon dioxide.

Section 11: Toxicological information

11.1 Information on Toxicological effects

Acute toxicity: Acute toxicity, LD50, Intraperitoneal, Mouse, 616.0 MG/KG.

Result:

Lungs, Thorax, or Respiration: Sputum.

Biochemical: Metabolism (Intermediary): Other proteins.

Biochemical: Metabolism (intermediary): Effect on inflammation or mediation of inflammation.

- Shell Chemical Company. Unpublished Report., Vol/p/yr: -,6, 1961

Acute toxicity, LD50, Skin, Species: Rabbit, 6480. MG/KG.

Result:

Lungs, Thorax, or Respiration: Other changes.

Biochemical: Metabolism (intermediary): Effect on inflammation or mediation of inflammation.

- Shell Chemical Company., Vol/p/yr: MSDS-5390-,

Acute toxicity, LC50, Inhalation, Mouse, 32.00 MG/M3.

Result:

Brain and Coverings: Other degenerative changes.

Biochemical: Metabolism (intermediary): Effect on inflammation or mediation of inflammation.

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Acute toxicity, LD50, Intraperitoneal, Species: Guinea pig, 2.000 GM/KG.
Result:
Immunological Including Allergic: Increase in humoral immune response.

Skin corrosion/irritation:	No data available
Serious eye damage/irritation:	No data available
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	Mutagenic effects have occurred in experimental animals.
Carcinogenicity:	CAS# 78-93-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Reproductive toxicity:	No data available
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard	No data available

11.1.1 Hazard Class information:

No data available

11.1.2 Mixture toxicity:

No data available

11.1.3 Critical studies:

No data available

11.1.4 Non-compliance hazard class:

No data available

11.1.5 Information on likely routes of exposure:

No data available

11.1.6 Symptoms related to the physical, chemical and toxicological characteristics:

No data available

11.1.7 Delayed and immediate effects as well as chronic effects from short and long-term exposure:

No data available

11.1.8 Interactive effects:

No data available

11.1.9 Absence of specific data:

No data available



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11.1.10 Mixtures:

No data available

11.1.11 Mixture vs Substance information:

No data available

11.1.12 Other information:

No data available

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.

12.2 Persistence and degradability:

No data available

12.3 Bioaccumulative potential:

No data available

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

No data available

12.6 Other adverse effects:

No data available

Section 13: Disposal considerations

13.1 Waste treatment methods:

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.



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RCRA P-Series: None listed.
RCRA U-Series:

Waste number U159 (Ignitable waste, Toxic waste).

Section 14: Transport information

14.1	UN number:	1210
14.2	Proper shipping name:	
	US DOT:	Printing Ink Related Material
	Canadian TDG:	Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]
	European ADR/RID:	Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]
	IMDG/IMO:	Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]
	ICAO/IATA:	Printing ink, [flammable or] Printing ink related material [(including printing ink thinning or reducing compound), flammable]
14.3	Transport hazard class(es) :	3 - FLAMMABLE LIQUID
14.4	Packing group:	II
14.5	Environmental hazards:	N/A
14.6	Special precautions for user:	N/A
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code:	
		N/A

Section 15: Regulatory information

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists				
CAS #	Hazardous components	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
78-93-3	Methyl Ethyl Ketone	No	Yes 5000LB	No

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CAS #	Hazardous components	Canadian NPRI	Canadian Toxic	Canadian DSL
78-93-3	Methyl Ethyl Ketone	Yes	No	Yes

CAS #	Hazardous components	CAA HAP, ODC	CWA NPDES	TSCA
78-93-3	Methyl Ethyl Ketone	No	No	Yes - Inv

CAS #	Hazardous components	CA Prop 65	Mexico INSQ	Australia ICS
78-93-3	Methyl Ethyl Ketone	No	Yes - 1193	Listed

CAS #	Hazardous components	New Zealand IOC	China IECSC	Japan ENCS
78-93-3	Methyl Ethyl Ketone	Listed	Listed	Yes - 2-542

CAS #	Hazardous components	Japan ISHL	Korea ECL	Philippines
78-93-3	Methyl Ethyl Ketone	Listed	Yes KE-24094	Listed

CAS #	Hazardous components	Taiwan TCSCA	Singapore HSL	Israel HSL:
78-93-3	Methyl Ethyl Ketone	Listed	No	No

CAS #	Hazardous components	Germany WHCS	Switzerland Giftliste 1	Switzerland INNS
78-93-3	Methyl Ethyl Ketone	Yes - 150	Yes G-2429	No

CAS #	Hazardous components	REACH	Kyoto GHG	Rotterdam
78-93-3	Methyl Ethyl Ketone	Yes - (R), (P)	No	No

CAS #	Hazardous components	Stockholm		
78-93-3	Methyl Ethyl Ketone	No		

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Canadian WHMIS Classification:



CLASS B, DIVISION 2: Flammable Liquids

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

15.2 Chemical safety assessment

Section 16: Other information

Revision Date: 11/14/19

Revision Notes: Format updated to (EU) 2015/830.

Additional Information:

Company 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 recommend 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, date 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.