Safety Data Sheet
Methyl ethyl ketone

Version 1.0 Revision Date: 08/18/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methyl ethyl ketone
Product Use Description : SOLVENT

Manufacturer or supplier's details

Company : Southeastern Chemical Industries Group LLC.
Address 660 Oak Place
Port Orange, FL 32127
United States of America
386.760.9332

Emergency telephone number:
Transport North America: INFOTRAC 800.535.5053

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2

Eye irritation : Category 2A

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.

Potential Health Effects

Carcinogenicity:

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Emergency Overview

Appearance	liquid
Colour	colourless
Odour	characteristic, pleasant, acetone-like
Hazard Summary	No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical Name	Concentration (%)
78-93-3	Methyl ethyl ketone	90 - 100

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.
In case of skin contact	:	If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses. No hazardous combustion products are known
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Use a water spray to cool fully closed containers.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be

stored separately in closed containments.

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for fire-fighting if necessary.

NFPA Flammable and Combustible Liquids Classification:
Flammable Liquid Class IB

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and

national regulations.

Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully re-sealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
78-93-3	Methyl ethyl ketone	TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH
		TWA	200 ppm 590 mg/m3	NIOSH REL
		ST	300 ppm 885 mg/m3	NIOSH REL
		TWA	200 ppm 590 mg/m3	OSHA Z-1
		TWA	200 ppm 590 mg/m3	OSHA P0
		STEL	300 ppm 885 mg/m3	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methyl ethyl ketone	78-93-3	MEK	In urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally

required.
In the case of vapour formation use a respirator with an approved filter.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colourless
Odour	:	characteristic, pleasant, acetone-like
Odour Threshold	:	No data available
pH	:	No data available
Freezing Point (Freezing Point)	:	-87 °C (-125 °F)
Boiling Point (Boiling point/boiling range)	:	79.59 °C (175.26 °F)
Flash point	:	-7 °C (19 °F)
Evaporation rate	:	3.6 n-Butyl Acetate 2.7 Ethyl Ether
Flammability (solid, gas)	:	No data available

Burning rate	:	No data available
Upper explosion limit	:	11.5 %(V)
Lower explosion limit	:	1.4 %(V)
Vapour pressure	:	91 mmHg @ 25 °C (77 °F) 70 mmHg @ 20 °C (68 °F)
Relative vapour density	:	2.41 @ 20 °C (68 °F) AIR=1
Relative density	:	0.806 @ 20 °C (68 °F)
Density	:	0.806 g/cm3 @ 20 °C (68 °F)
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	partly miscible
Solubility in other solvents	:	Solvent: Acetone Description: soluble Solvent: Alcohol Description: soluble Solvent: Benzene Description: soluble Solvent: Ether Description: soluble
Partition coefficient: n-octanol/water	:	log Pow: 0.29
Auto-ignition temperature	:	404 °C
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	0.41 mPa.s
Viscosity, kinematic	:	0.51 mm2/s

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Avoid contact with: Amines Ammonia Chloroform Copper Copper alloys Halogenated compounds Nitric acid Strong oxidizing agents hydrogen peroxide isocyanates strong alkalis strong bases strong mineral acids
Hazardous decomposition products	:	carbon dioxide and carbon monoxide toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

78-93-3:

Acute oral toxicity	:	LD50 (rat): 2,737 mg/kg
Acute inhalation toxicity	:	LC50 (mouse): 320 mg/l Exposure time: 4 h
Acute dermal toxicity	:	LD50 (rabbit): 6,480 mg/kg

Skin corrosion/irritation

Product:

Remarks: Moderate skin irritation

Components:

78-93-3:
Species: rabbit
Exposure time: 24 h
Result: Mild skin irritation

Serious eye damage/eye irritation

Product:

Remarks: Severe eye irritation

Components:

78-93-3:
Species: rabbit
Result: Irritating to eyes.
Exposure time: 24 h

Respiratory or skin sensitisation

Components:

78-93-3:
Test Type: Buehler Test
Species: guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

78-93-3:

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	:	Test Type: Mammalian cell gene mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative

Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: mouse (male and female) Dose: 1.96 mL/kg Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

78-93-3:
Remarks: This information is not available.

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Reproductive toxicity

Components:

78-93-3:

Effects on foetal development	:	Species: rat, female Application Route: Inhalation Dose: 400, 1000, 3000 ppm Duration of Single Treatment: 18 d Frequency of Treatment: 7 days/week General Toxicity Maternal: NOAEC: 1,002 ppm Teratogenicity: NOAEC: 1,002 ppm Method: OECD Test Guideline 414 GLP: no
Reproductive toxicity - Assessment	:	Fertility classification not possible from current data. Did not show teratogenic effects in animal experiments.

STOT - single exposure

Product:
Target Organs: Central nervous system

Components:

78-93-3:
Exposure routes: Inhalation
Target Organs: Central nervous system
Assessment: May cause drowsiness or dizziness., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT - repeated exposure

Product:

No data available

Components:

No data available

Aspiration toxicity

Product:
May be harmful if swallowed and enters airways.

Further information

Product:
Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
78-93-3:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 2,993 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 308 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 2,029 mg/l Exposure time: 96 h

Persistence and degradability

Components:
78-93-3:

Biodegradability	:	Concentration: 2 mg/l

Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 28 d
Test substance: Methylethyl Ketone
GLP: yes
Remarks: Readily biodegradable

Bioaccumulative potential

Components:

78-93-3:

Partition coefficient: n-octanol/water	:	log Pow: 2.49

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1193, Methyl ethyl ketone, 3 , II

IMDG (International Maritime Dangerous Goods): UN1193, METHYL ETHYL KETONE, 3, II, Flash Point:-7 °C(19 °F)

DOT (Department of Transportation): UN1193, Methyl ethyl ketone, 3, II

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Flammable liquid, Moderate skin irritant, Moderate eye irritant, Carcinogen

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Methyl ethyl ketone	78-93-3	5000	5000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

78-93-3 Methyl ethyl ketone 100 %

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean-Water Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

78-93-3 Methyl ethyl ketone 90 - 100 %

Pennsylvania Right To Know

78-93-3 Methyl ethyl ketone 90 - 100 %

New Jersey Right To Know

78-93-3 Methyl ethyl ketone 90 - 100 %

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

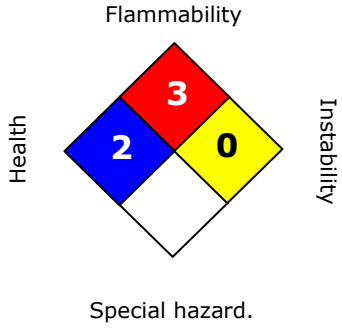
1907/2006 (EU)	:	n (Negative listing) (Not in compliance with the inventory)
Switzerland. New notified substances and declared preparations	:	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)
United States TSCA Inventory	:	y (positive listing) (On TSCA Inventory)
Canadian Domestic Substances List (DSL)	:	y (positive listing) (All components of this product are on the Canadian DSL.)
Australia Inventory of Chemical Substances (AICS)	:	y (positive listing)

		(On the inventory, or in compliance with the inventory)
New Zealand. Inventory of Chemical Substances	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Japan. ENCS - Existing and New Chemical Substances Inventory	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Korea. Korean Existing Chemicals Inventory (KECI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
China. Inventory of Existing Chemical Substances in China (IECSC)	:	y (positive listing) (On the inventory, or in compliance with the inventory)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Southeastern Chemical Industries Group LLC.

Material number:
16056356, 16056357, 16056358, 16062129, 16056353, 16056352, 16056351, 16056350, 16056349, 16054779, 16046240, 16042921, 16025330, 16021759, 16019432, 16015617, 16014535, 16011780, 16010154, 16010153, 16003404, 753188, 744157, 744156, 744155, 743541, 737136, 732888, 71426, 105116, 89683, 710843, 554046, 554339, 554259, 710845, 710844, 699274, 675942, 659492, 659543, 609164, 604726, 602950, 573215, 554301, 554258, 554057, 554072, 546939, 547346, 56925, 55985, 55046, 106065, 105122, 104184, 89681, 72410, 88743, 73303, 56030, 72360, 56778, 72407, 55980, 88588, 105887, 88163, 88696, 104973, 55830, 105891, 56748, 106249, 105895, 105078, 72211, 57110, 158779, 503944, 500032, 20025, 20024, 20023, 20022, 20020, 20019, 20021

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chem-	LOAEL	Lowest Observed Adverse Effect

	ical Substances		Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philipines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Compositon, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50		Lethal Concentration 50%	