

SAFETY DATA SHEET



DATE ISSUED :	9/9/2016
SDS REF. No :	A-4A00 SERIES

A-4A00 SERIES MODIFIED ACRYLIC AEROSOL

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: A-4A00 SERIES MODIFIED ACRYLIC AEROSOL

PRODUCT CODE: A-4A00 SERIES MODIFIED ACRYLIC AEROSOL

PRODUCT USE: Industrial Aerosol Touch Up Paint

MANUFACTURER

Cardinal Industrial Finishes
1329 Potrero Ave

S. El Monte, CA,
626 444-9274

24 HR. EMERGENCY TELEPHONE NUMBER

CHEMTREC (US Transportation): (800)424-9300

CHEMTREC (International : 1(202)483-7616

Transportation)

WEB: WWW.CARDINALPAINT.COM

2. HAZARDS IDENTIFICATION

PICTOGRAMS



SIGNAL WORD : DANGER

HAZARD STATEMENTS :

H223 Flammable aerosol.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

PRECAUTIONARY STATEMENTS :

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

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P337 + P313 If eye irritation persists: Get medical advice/attention.

P403 Store in a well-ventilated place.

P501 Dispose of in accordance with Local, Regional, State, Federal and International Regulations.

R40 Limited evidence of a carcinogenic effect.

S36 Wear suitable protective clothing.

S37 Wear suitable gloves.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	CAS Number	
Propane Blend	20% - 25%	74-98-6	
Acetone	15% - 20%	67-64-1	

Methyl Ethyl Ketone	15% - 20%	78-93-3	
Acetic acid, methyl ester methyl ,acetate	10% - 15%	79-20-9	
Dipropylene Glycol Methyl Ether Acetate	1% - 5%	88917-22-0	
n-Butyl Acetate	1% - 5%	123-86-4	

4. FIRST AID MEASURES

Description of first aid measures.

EYES CONTACT : Flush with large quantities of water for 15 to 30 minutes. Remove contact lenses. Keep eyes wide open while rising. If eye irritation persists: Get medical attention.

SKIN CONTACT : Wash exposed area with mild soap and water for 15 to 30 minutes. Remove contaminated clothing. Repeated exposure may cause dryness or cracking.

INGESTION : Rinse mouth. Do NOT induce vomiting. Keep victim warm and seek immediate attention.

INHALATION : Remove to fresh air and keep in a position comfortable to breath. Call a doctor/physician if you feel unwell. Get medical attention.

Most important symptoms and effects, both acute and delayed. Symptoms/injuries: Eye irritation

Symptoms/injuries after inhalation: May cause drowsiness or dizziness.

Symptoms/injuries after eye contact: Cause serious eye irritation.

Symptoms/injuries after ingestion: Ingestion may cause nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed.

If medical advise is needed, have product container or label on hand.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA : In the event of a fire, use specifically suitable extinguishing agents. Suitable extinguishing media: Foam, alcohol resistant foam, CO2, water fog. Unsuitable extinguishing media: Do not use heavy water stream. A heavy water stream may spread burning liquid.

FIRE FIGHTING PROCEDURE : Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering the environment.

Protection during firefighting: Firefighters should wear full protective gear. Do not enter fire area without proper protective equipment, including self-contained breathing apparatus with full face piece operated in pressure demand or other positive pressure modes.

UNUSUAL FIRE AND EXPLOSION HAZARD : Fire hazard: Highly flammable/liquid or vapor.

Explosive hazard: May form flammable/explosive vapor-air mixture.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES :

General measures: Remove ignition sources. Use special care to avoid static electric charges. No smoking.

FOR NON-EMERGENCY PERSONNEL :

For non-Emergency procedures: Evacuate unnecessary personnel.

FOR EMERGENCY RESPONDERS :

Equip cleanup crew with proper protection. Avoid breathing fume, vapors.

ENVIRONMENTAL PRECAUTIONS :

Prevent entry to sewers and public waters.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP :

Collect damaged aerosols and use absorbent and/or inert material, then place in suitable container.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING : Additional hazards when processed: Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when you are leaving work. Provide good ventilation in process area to prevent formation of vapor. No smoking. Use only non-sparking tools. Use outdoors or in a well ventilated area. Avoid breathing fume, vapors.

Hygiene measures: Wash Skin thoroughly after handling.

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES : Storage conditions: Store in a dry, cool and well-ventilated place away from: Heat sources. Direct sunlight.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Source of ignition. Direct sunlight. Heat Sources.

8. EXPOSURE CONTROLS\PERSONAL PROTECTION

Acetic acid, methyl ester methyl ,acetate(79-20-9)		
USA ACGIH	ACGIH (STEL)	250 ppm
USA ACGIH	ACGIH TWA	200 ppm
USA NIOSH	NIOSH (REL) TWA	200 ppm, 610 mg/m3
USA NIOSH	NIOSH (STEL) TWA	250 ppm, 760 mg/m3
USA OSHA	OSHA (STEL) Table Z-1	250 ppm, 760 mg/m3
USA OSHA	OSHA (TWA) Table Z-1	200 ppm, 610 mg/m3
Acetone(67-64-1)		
USA ACGIH	ACGIH STEL TLV	750 ppm
USA ACGIH	ACGIH TWA TLV	500 ppm
USA NIOSH	NIOSH STEL (Table Z-1)	1,000 ppm, 2,400 mg/m3
USA NIOSH	NIOSH TWA	250 ppm, 590 mg/m3
USA OSHA	OSHA TWA (Table Z-1)	1,000 ppm, 2,400 mg/m3
Benzene(71-43-2)		
USA ACGIH	ACGIH STEL	2.5 ppm
USA ACGIH	ACGIH TWA	0.5 ppm
USA OSHA	OSHA CARC PEL	1 ppm
USA OSHA	OSHA CARC STEL	5 ppm
USA OSHA	OSHA CIEL (Table Z-1-A)	5 ppm
USA OSHA	OSHA STEL	5 ppm
USA OSHA	OSHA TWA (Table Z-1-A)	1 ppm
Carbon Black(1333-86-4)		
USA ACGIH	ACGIH TLV (mg/m3)	3.0 mg/m3
USA OSHA	OSHA PEL (mg/m3)	3.5 mg/m3
Cumene(98-82-8)		
USA ACGIH	ACGIH (TLV) TWA	50 ppm
USA NIOSH	NIOSH (TWA) REL	50 ppm, 245 mg/m3
USA OSHA	OSHA (TWA) Table Z-1	50 ppm, 245 mg/m3
Diethylene glycol n-butyl ether(112-34-5)		
USA ACGIH	ACGIH TLV (TWA)	10 ppm
Dipropylene Glycol Methyl Ether Acetate(88917-22-0)		
USA OSHA	OSHA STEL (ppm, mg/m3)	150 ppm, 1,164 mg/m3
USA OSHA	OSHA TWA (ppm, mg/m3)	100 ppm, 776 mg/m3
Ethylene glycol mono butyl ether(111-76-2)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA NIOSH	NIOSH REL (ppm)	5 ppm
USA OSHA	OSHA PO TWA (ppm)	25 ppm
USA OSHA	OSHA TABLE Z-1 TWA (mg/m3)	50 ppm, 240 mg/m3
Formaldehyde(50-00-0)		
USA ACGIH	ACGIH (TLV)	0.3 ppm
USA OSHA	OSHA (PEL) STEL	2 ppm
USA OSHA	OSHA (PEL) STEL	2 ppm STEL 15 min
USA OSHA	OSHA (PEL) TWA	0.75 ppm
Methyl Amyl Ketone(110-43-0)		
USA ACGIH	ACGIH TLV TWA	50 ppm
USA OSHA	OSHA PEL (Table Z-1)	100 ppm, 465 mg/m3
Methyl Ethyl Ketone(78-93-3)		
USA ACGIH	ACGIH STEL (ppm)	300 ppm
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	100 ppm
USA OSHA	OSHA PEL TWA (mg/m3)	410 mg/m3
Methyl Ethyl Ketoxime(96-29-7)		

USA WEEL	(WEEL) TWA	10 ppm
n-Butyl Acetate(123-86-4)		
USA ACGIH	ACGIH STEL	200 ppm
USA ACGIH	ACGIH TWA	150 ppm
USA OSHA	OSHA PEL (Table Z-1)	150 ppm, 710 mg/m3
P.M. Acetate(108-65-6)		
USA AIHA	AIAH (WEEL) TWA	50 ppm
Phenylethane(100-41-4)		
USA ACGIH	ACGIH STEL	125 ppm
USA ACGIH	ACGIH TWA	20 ppm
USA NIOSH	NIOSH REL	100 ppm, 435 mg/m3
USA NIOSH	NIOSH REL (ST)	125 ppm, 545 mg/m3
USA OSHA	OSHA STEL	125 ppm, 545 mg/m3
USA OSHA	OSHA TWA (Table Z-1)	100 ppm, 435 mg/m3
Propane Blend(74-98-6)		
ACGIH	ACGIH	N/E
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) mg/m3	1800 mg/m3
Toluene(108-88-3)		
USA ACGIH	ACGIH TWA	20 ppm
USA NIOSH	NIOSH REL (ST)	150 ppm, 560 mg/m3
USA NIOSH	NIOSH REL TWA	100 ppm, 375 mg/m3
USA OSHA	OSHA STEL (PO)	150 ppm, 560 mg/m3
USA OSHA	OSHA TWA (PO)	100 ppm, 375 ppm
USA OSHA	OSHA TWA (Table Z-2)	200 ppm

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION : If TLV of the product or any component is exceeded, a NIOSH approved dust respirator is advised in absence of environmental control. OSHA Regulations also permit other NIOSH dust respirators under specified conditions. (See your Safety Equipment Supplier) Engineering or administrative controls should be implemented to reduce exposure.

HAND PROTECTION REMARKS : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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

SKIN AND BODY PROTECTION : Wear impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	Liquid
Color	:	Various colors depending on the pigmentation.
Odor	:	Characteristic. Sweet. Mint like.
Odor threshold	:	No data available.
Ph	:	N/A - See Technical Data Sheet
Evaporation rate	:	Slower Than Ether
Melting point	:	-94.7 C (-138.46 F)
Freezing point	:	No data available.
Boiling point	:	-44.0 deg F TO 408.0 deg F
Flash point	:	-154.00
Lower explosion limit	:	1.21
Upper explosion limit	:	16.0
Vapor pressure	:	185 mm Hg
Vapor density	:	Heavier than air
Relative density	:	No data available.
Density	:	6.8093
Solubility	:	No data available.
Partion coefficient: n-octanol/water	:	No data available.
Autoignition temperature	:	No data available.

Decomposition temperature	:	No data available.
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10. STABILITY AND REACTIVITY

REACTIVITY : No dangerous reaction known under conditions of normal use.

CHEMICAL STABILITY : Stable under normal conditions.

CONDITIONS TO AVOID : Heat, flames and sparks. Extremely high temperatures and direct sunlight.

INCOMPATIBLE MATERIALS : Avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.

11. TOXICOLOGICAL INFORMATION

Acetic acid, methyl ester methyl ,acetate(79-20-9)	
Additional Information	Repeated dose toxicity Rat - male and female - Inhalation - NOAEL : 1,057 mg/m ³ - OECD Test Guideline 412 RTECS: AI9100000 narcosis, This product is metabolized into formic acid. Humans and other primates metabolize formic acid more slowly than do rodents. Formic acid can build up in the body producing toxic effects possibly leading to death; therefore, data from studies in rodents may have limited relevance for human risk assessment.
Aspiration hazard	No data available.
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. 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. 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.
Germ cell mutagenicity	Ames test <i>S. typhimurium</i> Result- negative OECD Test Guideline 474 Rat - male and female Result- negative
LC50 Inhalation - Rabbit - male and female	49.2 - 98.4 - 4 h, Inhalation - Rabbit - Male and female
LD50 - Oral - Rat - male, Acute toxicity	6,482 mg/kg, Oral - Rat - male
LD50 Dermal - Rabbit	>5,000 mg/kg - Dermal - Rabbit
Reproductive toxicity	No data available.
Respiratory or skin sensitization	No data available.
Serious eye damage/eye irritation	Irritation Eyes - Rabbit Result: Irritating to eyes. (OECD Test Guideline 405)
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness. - Central nervous system
Acetone(67-64-1)	
Aspiration toxicity	Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above TLV value may cause narcotic effects., Solvents may degrease the skin.
Carcinogenicity	Species: mouse, (female), Application Route: Dermal; Exposure time: .365 d (90%) or 424 d (100%), Dose: 0.1ml 90(71mg) or 100% (79mg), Frequency of Treatment: 3 times a wk, NOAEL: 79; Result: did not display carcinogenic properties., Carcinogenicity-Assessment: Not classified as a human carcinogen.
Germ cell mutagenicity	Test Type: mammalian cell gene mutation assay. Test species: Mouse Iymphorma, Metabolic activation: Without metabolic activation; Method: OECD Guideline 476; Result: negative; Test Type: Ames test, Metabolic activation: Without metabolic activation; Method: OECD Guideline 471; Result: negative, Test Type: Chromosome aberration test in vitro, Test species: Chinese hamster ovary (CHO), Metabolic activation: Without metabolic activation; Method: OECD Guideline 473; Result: negative; Genotoxicity in vivo: Test Type: I vivo micronucleus test. Test species: Mouse, Application Route: Oral, Exposure: 13 wk, Dose: 5,000, 10,000, 20,000 ppm, Result: negative

Germ cell mutagenicity Assessment	Animal testing did not show any mutagenic effects.
LC50 (rat) Inhalation	76 mg/l (4 h exposure)
LD50 (rat) Oral	5,800 mg/kg; Symptoms: tremors
LD50 Dermal	>7,426 mg/kg
Repeated dose exposure	Species: mouse, male, NOAEL: 20,000, Application Route: Oral, Exposure time: 13 wk, Number of exposures: daily, Dose: 1250, 2500, 5000, 10000, 20000, Method OECD Test Guideline 408, GLP: No data available.; Species: mouse, female, NAOEL 20000, LAOEL: 50000; Application Route: Oral, Exposure time: 13 wk, Number of exposures: daily, Dose: 1250, 2500, 5000, 10000, 20000, Method OECD Test Guideline 408, GLP: No data available; Repeated dose toxicity Assessment: causes mild skin irritation., Causes serious eye irritation.
Reproductive toxicity	Effects on fertility: Species: rat, male; Application Route: oral; Dose: 0, 5,000, 10,000 mg/l; Frequency of Treatment: 7 days/week; General Toxicity - Parent: LOAEL: 10,000; Fertility: 10,000; Effects on foetal development: Species: rat; Application Route: Inhalation; Dose: 0, 440, 2200, 11,000 ppm; Frequency of Treatment: 7 days/week; General Toxicity Material: NOAEC: 2,200 ppm; Teragenicity: NOAEC: 2,200 ppm; Embryo-foetal toxicity:: NOAEC: 2,200 ppm; Result: No teratogenic potential. GLP: No data available.; Reproductive toxicity Assessment: Did not show teratogenic effects in animal experiments.
Respiratory or skin sensitisation	Test type: Maximization test, Species: guinea pig, Assessment: Does not cause skin sensitisation. Result: Did not cause sensitisation on laboratory animals.
Serious eye damage/eye irritation	Species: rabbit, Result : Slightly irritating to eyes, Exposure time: 24 h, Classification: Irritating to eyes, Remarks: Eye irritation.
Skin corrosion/irritation	Species: rabbit, Exposure time: 24 h, Classification: Not irritating to skin, Method: In vivo, Result: Mild irritation, Remarks: Repeated or prolonged contact with the mixture may cause removal natural fat from the skin resulting in desiccation of the skin.
STOT - single exposure	Exposure routes: Inhalation (vapour); Assessment: May cause drowsiness or dizziness.
STOT- repeated exposure	No data available.
Benzene(71-43-2)	
Aspiration toxicity	May be fatal if swallowed and enters airways. Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.
Carcinogenicity	Species: rat Sex: female Dose: 0, 25, 50, 250 mg/kg Exposure time: 103 wks Number of exposures: daily, 5 days/week Test substance: yes Remarks: zymbal gland carcinomas, squamous cell papillomas Species: rat Sex: male Dose: 0, 50, 100, 200 mg/kg Exposure time: 103 wks Number of exposures: daily, 5 days/week Test substance: yes Remarks: zymbal gland carcinomas, squamous cell papillomas Species: mouse Sex: male and female Dose: 25, 50, 100 mg/kg Exposure time: 103 wks Number of exposures: daily, 5 days/week Test substance: yes Remarks: Clear evidence of multiple organ carcinogenicity.
CMR effects	Carcinogenicity: Human carcinogen. Mutagenicity: In vivo tests showed mutagenic effects Teratogenicity: Did not show teratogenic effects in animal experiments. Reproductive toxicity: Animal testing did not show any effects on fertility.
Eye irritation	May cause irreversible eye damage.
Further information	Chronic Health Hazard. Solvents may degrease the skin.
LC50 Dermal	44.5 mg/l Exposure time: 4 h Species: rat Sex: Not Specified Test atmosphere: vapor
LD50	> 8,260 mg/kg Species: rabbit
LD50 Oral	> 2,000 mg/kg Species: rat Sex: female
Repeated dose toxicity	Species: rat, female Sex: female. Application Route: oral gavage Dose: 0, 25, 50, 100 mg/kg Exposure time: 103 wk Number of exposures: 5 d/wk NOEL: < 25 mg/kg Lowest observable effect level: 25 mg/kg Species: rat, male Sex: male Application Route: oral gavage Dose: 0, 50, 100, 200 mg/kg Exposure time: 103 wk Number of exposures: 5 d/wk NOEL: < 50 mg/kg Lowest observable effect level: 50 mg/kg Species: mouse Application Route: oral gavage Dose: 0, 25, 50,100 mg/kg Exposure time: 103 wk NOEL: < 25 mg/kg
Sensitization	Did not cause sensitization on laboratory animals.
Skin irritation	May cause skin irritation in susceptible persons.
Carbon Black(1333-86-4)	
ACGIH	ACGIH The American Conference of Governmental Industrial Hygienists classifies carbon black as A4, Not Classifiable as a Human Carcinogen.
Carcinogenicity Classification	GHS- Not a hazardous substance or preparation according to the Global Harmonized System (GHS).
Human Epidemiology	Results of epidemiological studies of carbon black production workers suggest that cumulative exposure to carbon black may result in small decrements in lung function, as measured by FEV1. A recent U.S. respiratory morbidity study suggested a 27 mL decline in FEV1 from a 1 mg/m3 (inhalable fraction) exposure over a 40-year period. An older European investigation suggested an exposure to 1 mg/m3 (inhalable fraction) of carbon black over a 40-year working-lifetime will result in a 48 mL decline in FEV1. In contrast, normal age related decline over a similar period of time would be approximately 1200 ml. The relationship between symptoms and exposure to carbon black is less clear. In the U.S. study, 9% of the highest exposure group (in contrast to 5% of the unexposed group) reported symptoms consistent with chronic bronchitis. In the European study, methodological limitations in the administration of the questionnaire limit the drawing of definitive conclusions about symptoms.

Human Epidemiology - cont	Since this IARC evaluation of carbon black, Sorahan and Harrington 16) re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney 17-18) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington 16).
Human Epidemiology - cont.	Morfeld and McCunney 19) applied a Bayesian approach to unravel the role of uncontrolled confounders and identified smoking and prior exposure to occupational carcinogens received before being hired in the carbon black industry as main causes of the observed lung cancer excess risk. Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated. This view is consistent with the IARC evaluation in 2006. Several epidemiological and clinical studies of workers in the carbon black production industries show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black. No dose response relationship was observed in workers exposed to carbon black.
Human Epidemiology - cont.	This study, however, indicated a link between carbon black and small opacities on chest films, with negligible effects on lung function. A study on carbon black production workers in the UK 10) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant 11-14) found a similar increase in lung cancer risk but, like the 2001 UK study 10), found no association with carbon black exposure. In contrast, a large US study 15) of 18 plants showed a reduction in lung cancer risk in carbon black production workers. Based upon these studies, the February 2006 Working Group at IARC concluded that the human evidence for carcinogenicity was inadequate 1) .!
IARC	IARC In 1995 IARC concluded, "There is inadequate evidence in humans for the carcinogenicity of carbon black." Based on rat inhalation studies IARC concluded that there is, "sufficient evidence in experimental animals for the carcinogenicity of carbon black," IARC's overall evaluation was that, "Carbon black is possibly carcinogenic to humans (Group 2B)". This conclusion was based on IARC's guidelines, which require such a classification if one species exhibits carcinogenicity in two or more studies. IARC performed another review in 2006, and again classified carbon black as possibly carcinogenic to humans (Group 2B). In its 1987 review IARC concluded, "There is sufficient evidence in experimental animals for the carcinogenicity of carbon black extracts." Carbon black extracts are classified as, possibly carcinogenic to humans (Group 2B).
LD50 (Rat)	>8000 mg/kg
Mutagenic Effects and Germ Cell Mutagenicity	In an experimental investigation, mutational changes in the hprt gene were reported in alveolar epithelial cells in the rat following inhalation exposure to carbon black. This observation is believed to be rat specific and a consequence of "lung overload" which led to chronic inflammation and release of genotoxic oxygen species. This mechanism is considered to be a secondary genotoxic effect and thus, carbon black itself would not be considered to be mutagenic. Carbon black is not suitable to be tested in bacterial (Ames test) and other in vitro systems because of its insolubility in aqueous solutions. When tested, however, results for carbon black showed no mutagenic effects. Organic solvent extracts of carbon black can, however, contain traces of polycyclic aromatic hydrocarbons (PAHs). A study to examine the bioavailability of these PAHs showed that PAHs are very tightly bound to carbon black and not bioavailable.
NIOSH	NIOSH The U.S. National Institute of Occupational Safety and Health (NIOSH) 1978 criteria document on carbon black recommends that only carbon blacks with PAH contaminant levels greater than 0.1% require the measurement of PAHs in air. As some PAHs are possible human carcinogens, NIOSH recommends an exposure limit of 0.1 mg/m ³ for PAHs in air, measured as the cyclohexane-extractable fraction.
NTP	NTP Carbon black is not designated a carcinogen by the U.S. National Toxicology Program (NTP), the U.S. Occupational Safety and Health Administration (OSHA) or the European Union (EU).
Reproductive and Teratogenic Effects	No experimental studies on effects of carbon black on fertility and reproduction have been located. However, based on toxicokinetic data, carbon black is deposited in the lungs and based on its specific physicochemical properties (insolubility, low absorption potential), it is not likely to distribute in the body to reach reproductive organs, embryo and/or foetus under in vivo conditions. Therefore, no adverse effects of carbon black to fertility/reproduction or to foetal development are expected. No effects have been reported in long-term animal studies.
Sensitization	No animal data is available. No cases in humans have been reported.
STOT- repeated exposure	Therefore, no STOT, Repeated exposure classification is made.
STOT- single exposure	Inhalation studies with the rat showed lung effects (see Section 11.2 and 11.3), these effects are believed to be the effects of "lung overload" 1 and these effects are believed to be specific to the species. In addition, the European CLP Regulation states that no classification is necessary if the mechanism is not relevant to humans. 4) Also, the CLP Guidance on classification and labeling states that the "lung overload" mechanism is not relevant to humans. 4) Therefore, no STOT, Repeated Exposure classification is made
Cumene(98-82-8)	

Additional Information	RTECS: GR8575000
Aspiration hazard	No data available.
Carcinogenicity	Carcinogenicity IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cumene) 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. 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. 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.
Dermal	No data available.
Germ cell mutagenicity	In-vitro assay, S. typhimurium, Result: negative
Inhalation:	No data available.
LD50 Oral - Rat - Acute toxicity	2,260 mg/kg,
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Guinea pig - Result: No skin irritation. (OECD Test Guideline 406)
Serious eye damage/eye irritation	Eyes - Rabbit Result: No skin irritation. (OECD Test Guideline 405)
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation. (OECD Test Guideline 404)
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
Diethylene glycol n-butyl ether(112-34-5)	
Additional Information	Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 250 mg/kg RTECS: KJ9100000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence
Aspiration hazard	No data available.
Carcinogenicity	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. 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. 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.
Inhalation	The LC50 has not be determined.
LD Dermal - Rabbit	2,764 mg/m3
LD50 Oral - Mouse-male	2,410 mg/m3
LD50 Oral - Rat - male	3,305 mg/kg
Repeated Dose Toxicity	In animals, effects have been reported on the following organs: Blood. kidney. Liver
Reproductive toxicity	In animals studies, did not interfere with reproduction. However, body weights of newborn animals were decreased.
Respiratory or skin sensitization	Maximization Test GPMT,Guinea pig Result: Does not cause skin sensitization. (OECD Test Guideline 406)
Serious eye damage/eye irritation	May cause severe eye irritation. May cause slight corneal injury.
Skin corrosion/irritation	Skin - Rabbit Result: Mild skin irritation - 1 h (OECD Test Guideline 404)
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
Dipropylene Glycol Methyl Ether Acetate(88917-22-0)	
Additional information	RTECS: Not available. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Aspiration hazard	No data available.
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.
Germ cell mutagenicity	No Data available.
LC50 Inhalation	No Data available.

LD50 Dermal	No Data available.
LD50 Oral	No Data available.
Other information on acute toxicity	No Data available.
Reproductive toxicity	No Data available
Respiratory or skin sensitisation	No Data available.
Serious eye damage/eye irritation	No Data available.
Skin corrosion/irritation	No Data available.
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	Inhalation - May cause respiratory irritation.
Teratogenicity	No Data available.
Ethylene glycol mono butyl ether(111-76-2)	
Aspiration toxicity	Remarks: No data available.
Carcinogenicity	Species mouse, Application Route: Inhalation, Exposure time 2 yr, Activity duration: 6 h, Frequency of Treatment: 5 days/week, NAOEL: 125 ppm Result: Limited evidence of carcinogenic effects with no relevance to humans., Carcinogenicity-Assessment: Not evidence of carcinogenicity in animal studies..
Further information	Product Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.,
Germ cell mutagenicity	Genotoxicity in vitro: Test Type: Mammalian cell gene mutation assay; Test species: Chinese hamster (CHO), Metabolic activation: with and without metabolic activation. Result: negative., Genotoxicity in vivo: Test Type: In vivo micronucleus test., Test species:: mouse (male), application Route: Intraperitoneal, Result: negative., Germ cell mutagenicity Assessment: Tests on bacterial or mammalian did not show mutagenic effects.
LC50 (rat) inhalation	Acute inhalation toxicity: 500 ppm, Exposure time: 4 h; Assessment: the component/mixture is moderately toxic after short term inhalation.
LC50 (rat) Oral	Acute toxicity estimate: 500 mg/kg; Method: Expert judgement.; Assessment: the component/mixture is moderately toxic after single ingestion.
LD50 (rat) dermal	Acute toxicity estimate: 1,1000 mg/kg; Method: Expert judgement; Assessment: the component/mixture is moderately toxic after single contact with skin.
Repeated dose toxicity	Species: rat NOAEL: 30, Application Route: Inhalation Exposure time: 14 wk Number of exposures: 6 h/d, 5 d/wk.
Reproductive toxicity	Effects on fertility : Test Type: Two-generation study Species: mouse Application Route: oral Fertility: NOAEL: 720 mg/kg body weight Symptoms: Reduced fertility Result: Reduced fertility at maternally toxic doses Effects on foetal development : Test Type: Embryo-foetal development Species: rat Application Route: Inhalation Duration of Single Treatment: 10 d Frequency of Treatment: 6 hr/day Developmental Toxicity: Lowest observed adverse effect level: 100 ppm Result: Developmental toxicity occurred at maternal toxicity dose levels Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments
Respiratory or skin sensitisation	Test Type: Maximization test, Species guinea pig, Result: Did not cause sensitisation on laboratory animals.
Serious eye damage/ eye irritation	Species rabbit, Exposure time 24 h, Result: Irritating to eyes.
Skin corrosion/irritation	Remarks: Moderate skin irritation in susceptible persons., Species rabbit, Exposure time 24 h, Result: Mild skin irritation
STOT - repeated exposure	No data available.
STOT - single exposure	No data available.
Formaldehyde(50-00-0)	
Genotoxicity	Formaldehyde was found to be weakly mutagenic in a number of in vitro genotoxicity tests and positive in certain in vivo screening tests for mutagenicity. Formaldehyde did not cause birth defects in rats inhaling concentrations up to 10 ppm. However, a study using higher levels did show a slight but statistically significant reduction in male fetal body weight.
LD50 Dermal - Rabbit	270 mg/kg
LD50 Inhalation - Rat	0.31-0.59 mg/l (4 h) (Dust/ Mist)
LD50 Oral - Rat - Acute toxicity	100 mg/kg, Rat
Other Information	Lifetime inhalation of formaldehyde vapor at concentrations above 5 ppm for 6 hours per day, caused nasal tumors in laboratory animals. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1 (known) human carcinogen based on epidemiological evidence linking formaldehyde exposure to the occurrence of nasopharyngeal cancer, a rare type of cancer. IARC also found limited evidence of cancer of the nasal cavity and

	paranasal sinuses and insufficient evidence for an association between formaldehyde and leukemia. Inhalation caused liver and kidney damage in laboratory animal tests.
Sensitization	Formaldehyde has been reported to cause pulmonary hypersensitivity in some individuals who were exposed to concentrations known to cause irritation, however, no pulmonary sensitization has been demonstrated in laboratory animal studies.
Skin/Eye irritation	Can cause severe eye and moderate skin irritation.
Specific Target Organ Toxicity - Repeated exposure	Repeated skin exposure to solutions of 2% or more formaldehyde has caused skin allergic reactions.
Specific Target Organ Toxicity - Single	No data.
Methyl Amyl Ketone(110-43-0)	
Aspiration hazard	May be harmful if swallowed and enters airways.
Carcinogenicity	No data available.
LD50 Dermal - (Rat)	>2,000 mg/kg
LD50 Inhalation - (Rat)	>16.7 mg/l (4 h)
LD-50 Oral - (Rat)	1,600 mg/kg
Mutagenicity	In vitro, No data available., In vivo, No data available.
Other adverse effects	No data available.
Repeated dose toxicity	No data available.
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Skin Sensitization:, (Mouse) - non-sensitizing.
Serious eye damage/eye irritation	(Rabbit, 24 h): slight.
Skin corrosion/irritation	(Rabbit, 24 h): moderate.
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
Methyl Ethyl Ketone(78-93-3)	
Aspiration toxicity	Product: May be harmful if swallowed and enters airways.
Carcinogenicity	Remarks: This information is not available, Carcinogenicity-Assement: Not classified as a human carcinogen.
Further information	Product Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.,
Germ cell mutagenicity	Genotoxicity in vitro: Test Type: Ames test, Metabolic activation: with and without metabolic activation, Method OECD Test Guideline 471
LC50 (mouse) inhalation	320 mg/l (4 h exposure)
LC50 (rat) Oral	3737 mg/kg
LD50 (rabbit) dermal	6,480 mg/kg
Reproductive toxicity	Effects on fetal development, Species: rat female, Application Route: Inhalation, Dose: 400, 1000, 3000 ppm,
Respiratory or skin sensitisation	Test Type: Buehler Test, Species guinea pig, Method OECD Test Guideline 406, Result: Did not cause sensitisation on laboratory animals.
Serious eye damage/ eye irritation	Remarks: Severe skin irritation, Species rabbit, Exposure time 24 h, Result: Irritation to eyes
Skin corrosion/irritation	Remarks: Moderate skin irritation, Species rabbit, Exposure time 24 h, Result: Mild skin irritation
STOT - repeated exposure	Product: No data available, Components: No data available.
STOT - single exposure	Product: Target Organs: Central Nervous system, Components: Exposure routes: Inhalation, Product: Target Organs: Central Nervous system
Methyl Ethyl Ketoxime(96-29-7)	
Additional Information	Repeated dose toxicity - Rat - male - Drinking - No observed adverse effect level - 25 mg/kg Repeated dose toxicity - Rat - male and female - inhalation (vapour) - No observed adverse effect level - 0.009 mg/kg RTECS: EL9275000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Aspiration hazard	No data available.
Carcinogenicity	Limited evidence of carcinogenicity in animal studies 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. 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. 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.
Germ cell mutagenicity	in vitro assay <i>S. typhimurium</i> Result: negative <i>Drosophila melanogaster</i> - male Result: negative.
LC50 Inhalation - Rat - male & female	4.83 mg/l, 4 h, Rat - male & female (OECD Test Guideline 403)
LD50 Dermal - Rabbit	1,000 - 1,800 mg/kg
LD50 Oral - Rat - Acute toxicity	2,236 mg/kg, Oral - Rat - (OECD Test Guideline 401)
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Buehler Test - Guinea pig May cause sensitization by skin contact. (OECD Test Guideline 406)
Serious eye damage/eye irritation	Eyes - Rabbit Result- Risk of serious damage to eyes. (OECD Test Guideline 405)
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation (OECD Test Guideline 404)
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
n-Butyl Acetate(123-86-4)	
Aspiration hazard	No data available.
Carcinogenicity	No data available.
Inhalation	No data available.
LD-50 Dermal - (Rabbit)	> 16ml/kg
LD-50 Oral - (Rat)	14,130 mg/kg
Mutagenicity	In vitro: No data available. In vivo: No data available.
Other adverse effects:	No data available.
Repeated dose toxicity	No data available.
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Skin Sensitization:, (Guinea Pig) - non-sensitizing.
Serious eye damage/eye irritation	(Rabbit, 24 h): none
Skin corrosion/irritation	(Rabbit, 24 h): none
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	Narcotic effect.
P.M. Acetate(108-65-6)	
Aspiration hazard	No data available.
Carcinogenicity	No data available.
LC50 - Inhalation Rat	>4345 ppm (Rat, 6 h)
LD50 - Dermal - Rabbit	>5000 mg/kg
LD50 - Oral - Rat	6,190 mg/kg
Mutagenicity	In vitro: No data available. In vivo: No data available.
Other adverse effects	No data available.
Repeated dose toxicity	No data available.
Reproductive toxicity.	No data available.
Respiratory or skin sensitization	Skin Sensitization:, (Guinea Pig) - non-sensitizing
Serious eye damage/eye irritation	(Rabbit): very slight
Skin corrosion/irritation	Specified substance(s) 2-methoxy-1-methylethyl acetate (Rabbit, 4 h): none (Rabbit, 24 h): none.
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
Phenylethane(100-41-4)	
Aspiration toxicity	May be fatal if swallowed and enters airways.
Carcinogenicity	Species: mouse, (male and female) Application Route: Inhalation Exposure time: 103 wk Activity duration: 6 h Dose: 0, 75, 250, 750 ppm Frequency of Treatment: 5 days/week NOAEL:

	250 ppm Method: OECD Test Guideline 453 Result: evidence of carcinogenic activity Symptoms: increased incidences of alveolar/bronchiolar neoplasms, increase incidence of hepatocellular carcinomas GLP: yes Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.
Germ cell mutagenicity	Genotoxicity in vitro, Test Type: Chromosome aberration test in vitro Test species: Chinese hamster ovary (CHO) Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative GLP: no : Test Type: Mammalian cell gene mutation assay Test species: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method : OECD Test Guideline 476 Result: negative GLP: yes Genotoxicity in vivo : Test Type: In vivo micronucleus test species: mouse (male) Application Route: Oral Method: OECD Test Guideline 474 Result: negative GLP: yes Test Type: DNA damage and/or repair Test species: mouse (male and female)Application Route: Inhalation Method: OECD Test Guideline 486 Result: negative GLP: yes Germ cell mutagenicity Assessment : In vivo tests did not show mutagenic effects
LC50 (Mouse, Male)	10 mg/l Assessment: The component/mixture is moderately toxic after short term inhalation.
LD50 (rabbit)	15,433 mg/kg
Repeated dose toxicity	Species: rat, male and female NOAEL: 75 mg/kg Application Route: Oral Exposure time: 28 d Dose: 75, 250 and 750 mg/kg bw/day Method: OECD Test Guideline 407 GLP: yes Symptoms: Increased kidney and liver weights
Reproductive toxicity	Effects on fertility : Test Type: One generation study Species: rat, male and female Application Route: Inhalation Dose: 0, 100, 500 and 1000 ppm Duration of Single Treatment: 6 h General Toxicity - Parent: NOAEC: 1,000 ppm General Toxicity F1: NOAEC: 100 ppm Symptoms: Reduced foetal weight. Reduced offspring weight gain. Method: OECD Test Guideline 415 Result: No reproductive effects. GLP: yes Effects on foetal development : Species: rat Application Route: Inhalation Dose: 0, 100, 500, 1000, 2000 ppm Duration of Single Treatment: 15 d General Toxicity Maternal: NOAEC: 500 ppm Teratogenicity: NOAEC: 2,000 ppm Developmental Toxicity: NOAEC: 500 ppm Symptoms: Reduced body weight Method: OECD Test Guideline 414 Result: Developmental toxicity occurred at maternal toxicity dose levels GLP: No data available Reproductive toxicity - Assessment : No toxicity to reproduction Did not show teratogenic effects in animal experiments.
Respiratory or skin sensitization	Remarks: No data available
Serious eye damage/eye irritation	Species: rabbit Result: Mild eye irritation Remarks: No data available
Skin corrosion/irritation	Species: rabbit Result: Mild skin irritation
STOT - repeated exposure	Target Organs: Auditory system Assessment: May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
STOT - single exposure	No data available.
Propane Blend(74-98-6)	
Aspiration	No end point data for material. Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Carcinogenicity	No end point data for material. Not expected to cause cancer.
Eye	Serious Eye Damage/Irritation: No end point data for material. , May cause mild, short-lasting discomfort to eyes.
Germ Cell Mutagenicity	Data available. Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471
Ingestion	N/A
Lactation	No end point data for material. Not expected to cause harm to breast-fed children.
LC50 (RAT) Inhalation	1443 mg/l (GAS) (15 minutes)
Other Information	May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite (cold burn). Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias. Simple asphyxiant: Acts by displacing oxygen in the lungs thereby diminishing the supply of oxygen available to the blood and tissues. Symptoms include shortness of breath, rapid heart rate, incoordination, lethargy, headaches, nausea, vomiting, and disorientation. Continued lack of oxygen may result in convulsions, loss of consciousness and death. Since exercise increase
Reproductive Toxicity	Data available. Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 422
Sensitization	No end point data for material. Not expected to be a respiratory sensitizer.
Skin	N/A
Specific Target Organ Toxicity (STOT) Repeated Exposure	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 422
Specific Target Organ	No end point data for material. Not expected to cause organ damage from a single exposure.

Toxicity (STOT) Single Exposure:	
Toluene(108-88-3)	
Aspiration toxicity	Aspiration Toxicity - Category 1
Carcinogenicity	Species: rat, (male and female) Application Route: inhalation (vapour) Exposure time: 103 wks Dose: 0, 600, 1200 ppm Frequency of Treatment: 6.5 h/d, 5 d/wk NOAEL: No observed adverse effect level: 1,200 ppm Method: OECD Test Guideline 453 Result: did not display carcinogenic properties Symptoms: Erosion of nasal epithelium Species: rat, (male and female) Application Route: inhalation (vapour) Exposure time: 103 wks Dose: 0, 600, 1200 ppm Frequency of Treatment: 6.5 h/d, 5 d/wk NOAEL: No observed adverse effect level: 1,200 ppm Method: OECD Test Guideline 453 Result: did not display carcinogenic properties Symptoms: Erosion of nasal epithelium Species: rat, (male and female) Application Route: inhalation (vapour) Exposure time: 103 wks Dose: 0, 600, 1200 ppm Frequency of Treatment: 6.5 h/d, 5 d/wk NOAEL: No observed adverse effect level: 1,200 ppm Method: OECD Test Guideline 453 Result: did not display carcinogenic properties Symptoms: Erosion of nasal epithelium , GLP: yes, Carcinoge
Further information	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.
Germ cell mutagenicity	Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay Test species: Mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative : Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative Genotoxicity in vivo : Test Type: Chromosome aberration assay in vivo Test species: rat Cell type: Bone marrow Application Route: Intraperitoneal Exposure time: 1 or 5 d Dose: 0, 0.025, 0.082, 0.247 ml/kg Result: negative Test Type: Dominant lethal assay Test species: mouse (male) Application Route: inhalation (vapour) Exposure time: 6 h/d, 5 d/wk for 8 wks Dose: 0, 100, 400 ppm Method: OECD Test Guideline 478 Result: negative Germ cell mutagenicity Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
LC50 (rat, male and female)	28.1 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403
LD50 (rabbit)	> 5,000 mg/kg
LD50 (rat, male)	> 5,580 mg/kg
Repeated dose toxicity	Species: mouse, male and female NOAEL: 625 mg/kg LOAEL: 1,250 mg/kg Application Route: Oral Exposure time: 13 wks Number of exposures: 5 d/wk Dose: 312, 625, 1250, 2500, 5000 Group: yes GLP: yes Symptoms: death, Increased liver weight, ataxia, hypoactivity, hypothermia Species: rat, male and female NOAEL: 300 Application Route: inhalation (vapour) Exposure time: 6, 12, or 18 mths Number of exposures: 6 h/d, 5 d/wk Dose: 0, 30, 100, 300 ppm Method: OECD Test Guideline 453 Repeated dose toxicity - Assessment : Causes skin irritation.
Reproductive toxicity	Effects on fertility : Test Type: Two-generation study Species: rat, male and female Application Route: Inhalation Dose: 0, 100, 500, 2000 ppm Frequency of Treatment: 7 days/week General Toxicity - Parent: NOAEC: 500 ppm General Toxicity F1: NOAEC: 500 ppm Fertility: NOAEC: 2,000 ppm Symptoms: Reduced maternal body weight gain. Reduced offspring weight gain. Method: OECD Test Guideline 416 Result: Animal testing did not show any effects on fertility. GLP: yes Test Type: Fertility Species: rat, male and female Application Route: inhalation (vapour) Dose: 0, 600, 1200 ppm Frequency of Treatment: 7 days/week General Toxicity - Parent: NOAEC: 600 ppm Symptoms: Decreased sperm count Result: Animal testing did not show any effects on fertility.
Reproductive toxicity (cont.)	Effects on foetal development : Species: rat Application Route: inhalation (vapour) Dose: 0, 250, 750, 1500, 3000 ppm Duration of Single Treatment: 10 d Frequency of Treatment: 6 hr/day General Toxicity Maternal: NOAEC: 750 ppm Developmental Toxicity: NOAEC: 750 ppm Symptoms: Maternal toxicity, Reduced body weight, Skeletal malformations. GLP: yes Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
Respiratory or skin sensitization	Test Type: Maximization Test (GPMT) Species: guinea pig Result: Did not cause sensitization on laboratory animals. GLP: yes
Serious eye damage/eye irritation	Species: rabbit Result: Irritating to eyes. Method: OECD Test Guideline 405
Skin corrosion/irritation	Species: rabbit Exposure time: 4 h Result: Irritating to skin.
STOT - repeated exposure	Inhalation Auditory system, Eyes May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
STOT - single exposure	Exposure routes: Target Organs: Assessment: Remarks: Inhalation Central nervous system May cause drowsiness or dizziness. The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

12. ECOLOGICAL INFORMATION

Acetic acid, methyl ester methyl acetate(79-20-9)	
Bioaccumulative potential	No data available.
EC50 Daphnia magna - Toxicity to daphnia and other aquatic invertebrates	1,026.7 mg/l - 48 h, Daphnia magna (Water flea) - OECD Test Guideline 202)
EC50 Desmodesmus subspicatus - Toxicity to algae	120 mg/l - 72 h, Desmodesmus subspicatus (Scenedesmus subspicatus) - (OECD Test Guideline 201)
EC50 Pseudomonas putida - Toxicity to bacteria	6,000 mg/l - 16 h, Pseudomonas putida
LC50 Danio rerio - Toxicity to fish	250-350 mg/l - 96 h, - Danio rerio (zebra fish) - (OECD Test Guideline 203)
Mobility in soil	No data available.
Other adverse effects	No data available.
Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: 70 % - Readily biodegradable (OECD Test Guideline 301D)
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Acetone(67-64-1)	
Bioaccumulative potential	Partition coefficient: n-octanol/water: log Pow: -0.24
EC50 (Daphnia magna (Water flea))	7,630 mg/l (Exposure time 48 h); Test substance: Acetone
LC50 (Oncorhynchus mykiss (rainbow trout))	6,100 mg/l (Exposure time: 48 h)
Mobility in soil	No data available.
Other adverse effects	No data Available. Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances., Additional ecological information: No data available.
Persistence and degradability	Biodegradability: Remarks: No data available
Toxicity to algae	Remarks: No data available
Benzene(71-43-2)	
Additional ecological information	Toxic to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.
EC50	10 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test substance: yes Method: OECD Test Guideline 202
Ecotoxicology Assessment	Acute aquatic toxicity Benzene : Toxic to aquatic life. Chronic aquatic toxicity Benzene : Harmful to aquatic life with long lasting effects.
ErC50	100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Test substance: yes Method: OECD Test Guideline 201
LC50	5.3 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) flow-through test substance: yes Method: OECD Test Guideline 203
Persistence and degradability	Biodegradability : This material is expected to be readily biodegradable.
Results of PBT assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
Carbon Black(1333-86-4)	
Behavior in water treatment plants	Activated sludge, EC0 (3 h) > 800 mg/L. DEV L3 (TTC test)
Bioaccumulation Potential	Potential bioaccumulation is not expected because of the physicochemical properties of the substance
EC50 (Scenedesmus subspicatus)	> 10,000 mg/L, OECD (Guideline 201)
EC50 Daphnia magna (waterflea)	>5600 mg/l (24 h) OECD (Guideline 202)
Environmental fate	Carbon black is an inert solid, stable and insoluble in water or organic solvents. Its vapour pressure is negligible. Based on these properties it is expected that carbon black will not occur in air or water in relevant amounts. Also potential for distribution via water or air can be dismissed. The deposition in soil or sediments is therefore the most relevant compartment of fate in the environment.
LC50 Brachydanio reio (zebrafish)	>1000 mg/l (96 h) OECD (Guideline 203)
NOEC 50 (Scenedesmus subspicatus)	> 10,000 mg/L, OECD (Guideline 201)

Cumene(98-82-8)	
Bioaccumulative potential	No data available.
EC50 - Daphnia (water flea) - Toxicity to daphnia and other aquatic invertebrates	2.14 mg/l - 48 h (OECD Test Guideline 202), Daphnia (water flea)
EC50 - Pseudokirchneriella subcapitata (green algae) - Toxicity to algae	2.60 mg/l - 72 h, Pseudokirchneriella subcapitata (green algae)
LC50 - Oncorhynchus mykiss (rainbow trout) Toxicity to fish	4.8 mg/l - 96 h, Oncorhynchus mykiss (rainbow trout)
Mobility in soil	No data available.
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.
Persistence and degradability	Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Diethylene glycol n-butyl ether(112-34-5)	
12.6 Other adverse effects	No data available.
Bioaccumulative potential	Bioconcentration poteitional is low (BCF <100 or Log Pow <3).
EC50 Daphnia magna - Toxicity to daphnia and other aquatic invertebrates	>100 mg/l - 48 h - Daphnia magna (Water flea), (Directive 67/548/EEC, Annex V, C.2.)
EC50 Desmodesmus subspicatus - Toxicity of algae	100 mg/l - 96 h - Desmodesmus subspicatus (Scenedesmus subspicatus) - (OECD Test Guideline 201)
LC50 Lepomis macrochirus - Toxicity to fish	1,300 mg/l - 96 h - Lepomis macrochirus (OECD Test Guideline 203)
LC50 Pseudomonas putida - Toxicity to bacteria	1170 mg/l - 16 h - Pseudomonas putida
Mobility in soil	Poteitional for mobility in soil very high (koc between 0 and 50).
Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: 91.7 % - Readily biodegradable (OECD Test Guideline 301B)
Dipropylene Glycol Methyl Ether Acetate(88917-22-0)	
Bioaccumulative potential	No Data available.
Mobility in soil	No Data available.
Other adverse effects	No Data available.
PBT and vPvB assessment	No Data available.
Persistence and degradability	No Data available.
Toxicity	No Data available.
Ethylene glycol mono butyl ether(111-76-2)	
Bioaccumulative potential	Partition coefficient: n-octanol/water: log Pow: 0.83
EC50 (Algee)	911 mg/l End point: Biomass Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: no
EC50 (Daphnia)	1,800 mg/l(48 h; Daphnia magna (Water flea)): Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: no
LC50 (fish)	1,474 mg/l Pimephales promelas (Fathead minnow))Exposure time: 96 h Test Type: static test, Method: OECD Test Guideline 203 GLP: no
Mobility in soil	No data available
Other adverse effects	No data available
Persistence and degradability	aerobic Inoculum: Activated sludge, domestic, adaption not specified, Result: Readily biodegradable. Biodegradation: 90.4 % Exposure time: 28 d Method: OECD Test Guideline 301B GLP: no
Product	Regulation: 40CFR Protection of Environment, Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class 1 Substances:

Formaldehyde(50-00-0)	
EC50 Daphnia - Toxicity to Water Flea	11.3-18 mg/l (48 h), Daphnia magna
LC50 Oncorhynchus - Toxicity to fish	100-136 mg/l, (96 h), Oncorhynchus mykiss
Toxicity to Algae	Not available.
Methyl Amyl Ketone(110-43-0)	
Aquatic invertebrates	No data available.
Bioaccumulative potential	No data available.
Chronic Toxicity (Fish)	No data available.
ErC50 (Senastrum capricornutum)	98.2 mg/l, 72 h
LC50 (Fathead Minnow) Acute toxicity	131 mg/l , (96 h)
Mobility in soil	No data available.
Persistence and degradability	69 % (28 d, Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)). Biological Oxygen Demand BOD-5: 1,770 mg/g BOD-20: 2,000 mg/g , Chemical Oxygen Demand: 2,420 mg/g, BOD/COD ratio No data available.
Results of PBT and vPvB assessment	No data available.
Methyl Ethyl Ketone(78-93-3)	
Bioaccumulative potential	Partition coefficient: n-octanol/water: log Pow: 2.49
EC50 (Algae)	2029 mg/l (48 h; Pseudokirchneriella subcapitata (Green Algae))
EC50 (Daphnia)	308 mg/l (48 h; Daphnia magna (Water flea))
LC50 (fish)	2993 mg/l (96 h; Pimephales promelas (Fathead minnow))
Mobility in soil	No data available
Other adverse effects	No data available
Persistence and degradability	Biodegradability: Concentration: 2mg/l; Result: Readily biodegradation: 98%; Exposure 28 d;
Product	Regulation: 40CFR Protection of Environment, Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class 1 Substances:
Methyl Ethyl Ketoxime(96-29-7)	
Bioaccumulative potential	Bioaccumulation Cyprinus carpio (Carp) - 42 d - 2 mg/l Bioconcentration factor (BCF): 0.5 - 0.6 (OECD Test Guideline 305C)
EC50 - Daphnia magna - Toxicity to daphnia and other aquatic invertebrates	>100 mg/l, 48 h, Daphnia magna (Water flea) - (OECD Test Guideline 202)
EC50 - Scenedesmus capricornutum - Toxicity to algae	11.6 mg/l, 72 h, Scenedesmus capricornutum (fresh water algae) - (OECD Test Guideline 201)
LC50 - Oryzias latipes - Toxicity to fish	>100 mg/l, 96 h, - Oryzias latipes - (OECD Test Guideline 203)
Mobility in soil	No data available.
Other adverse effects	No data available.
Persistence and degradability	MEKO has been determined to be biodegradable.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
n-Butyl Acetate(123-86-4)	
Bioaccumulative potential	No data available.
Chronic Toxicity	Fish: No data available. Aquatic invertebrates: No data available. Toxicity to Aquatic Plants: No data available.
LC-50 (Fathead Minnow) Acute Toxicity	18 mg/l, (96 h)
LC-50 (Water Flea) Aquatic invertebrates	44 mg/l , (48 h)
Mobility in soil	Known or predicted distribution to environmental compartments: No data available.
Other adverse effects	No data available.
Persistence and degradability	83 % (28 d), Biological Oxygen Demand:BOD-5: 730 mg/g, Chemical Oxygen Demand:1,010 mg/g, BOD/COD ratio:72 %.
Results of PBT and vPvB assessment	No data available.
P.M. Acetate(108-65-6)	
Aquatic invertebrates	NOEC (daphnia, 21 d): >= 100 mg/l EC-50 (daphnia, 21 d): > 100 mg/l
Bioaccumulative	No data available.

potential	
Biological Oxygen Demand	363 mg/g 1,050 mg/g
Chemical Oxygen Demand	No data available.
Chronic Toxicity Fish	LC-50 (Oryzias latipes, 14 d): 63.5 mg/l NOEC (Oryzias latipes, 14 d): 47.5 mg/l
LC50 - Daphnids - Aquatic invertebrates	408 mg/l (48 h)
LC50 - Fathead Minnow - Toxicity to Fish	161 mg/l (96 h)
Mobility in soil	No data available.
Other adverse effects	No data available.
Persistence and degradability	Biodegradation - 90 % (28 d, Ready Biodegradability: CO2 Evolution Test) Readily biodegradable
Results of PBT and vPvB assessment	No data available.
Toxicity to Aquatic Plants	EC-50 (Senastrum capricornutum, 96 h): > 1,000 mg/l NOEC (Senastrum capricornutum, 96 h): >= 1,000 mg/l
Phenylethane(100-41-4)	
Bioaccumulative potential	Partition coefficient: noctanol/water : log Pow: 2.92
EC50 (Daphnia magna (Water flea))	1.8 mg/l Exposure time: 48 h Test Type: static test
EC50 (Pseudokirchneriella subcapitata)	5.4 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: Static GLP: yes
LC50 (Oncorhynchus mykiss (rainbow trout))	4.2 mg/l Exposure time: 96 h Test Type: semi-static test
Mobility in soil	No data available.
Other adverse effects	Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
Persistence and degradability	Biodegradability : Inoculum: activated sludge Concentration: 22 mg/l Result: Readily biodegradable. Biodegradation: 70 % Exposure time: 28 d GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	(Daphnia): 3.6 mg/l Toxicity to bacteria : GLP: Remarks: No data available Ecotoxicology Assessment Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.
Propane Blend(74-98-6)	
Atmospheric Oxidation	Material -- Expected to degrade at a moderate rate in air.
Bioaccumulative potential	Material -- Potential to bioaccumulate is low
Ecotoxicity	Not expected to demonstrate chronic toxicity to aquatic organisms.
Mobility in soil	Material -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
Persistence and Degradability	Biodegradation: Material -- Expected to be inherently biodegradable
Toluene(108-88-3)	
Bioaccumulative potential	Partition coefficient: noctanol/water : log Pow: 2.73
EC50 (Ceriodaphnia dubia)	3.78 mg/l Exposure time: 48 h Test Type: Renewal
EC50 (Chlorella vulgaris (Fresh water algae))	134 mg/l Exposure time: 3 h Test Type: static test
IC50 (Bacteria)	84 mg/l Exposure time: 24 h, Test Type: Static Ecotoxicology Assessment Acute aquatic toxicity : Toxic to aquatic life. Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.
LC50 (Oncorhynchus mykiss (rainbow trout))	5.5 mg/l Exposure time: 96 h Test Type: flow-through test
Mobility in soil	No data available.
Other adverse effects	No data available.
Persistence and degradability	Biodegradability : Inoculum: Sewage Biodegradation: 100 % Remarks: Readily biodegradable

13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

GENERAL INFORMATION : No data available.

DISPOSAL METHOD: Dispose of waste and residues in accordance with Local, State, and Federal Regulations. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind or weld or near this container.

14. TRANSPORT INFORMATION

***CHECK WITH YOUR CARRIER FOR ADDITIONAL RESTRICTIONS THAT MAY APPLY.**

USDOT GROUND

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME (DOT) : Limited Quantity

HAZARDS CLASS : 2.1

UN/NA NUMBER : UN1950

PACKING GROUP : Not Applicable

EMERGENCY RESPONSE GUIDE (ERG) : 126

IATA (AIR)

DOT (INTERNATIONAL AIR TRANSPORTATION ASSOCIATION)

PROPER SHIPPING NAME : Aerosols

HAZARDS CLASS : 2.1

UN/NA NUMBER : UN1950

PACKING GROUP : N/A

EMERGENCY RESPONSE GUIDE (ERG) : 126

IMDG (OCEAN)

PROPER SHIPPING NAME : Aerosols

HAZARDS CLASS : 2.1

UN/NA NUMBER : UN1950

PACKING GROUP : N/A

EMERGENCY RESPONSE GUIDE (ERG) : 126

MARINE POLLUTANT : No

SPECIAL PRECAUTIONS : P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P235 Keep cool.

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

All ingredients in Section #3 are TSCA (Toxic Substance Control Act) listed.

OSHA HAZARDS : Flammable liquid, Moderate skin irritant, Moderate eye irritant, Carcinogen.

EPCRA - Emergency

CERCLA REPORTABLE QUANTITY

This product contains:	Chemical CAS#
Methyl Ethyl Ketone	78-93-3
Acetic acid, methyl ester methyl ,acetate	79-20-9
n-Butyl Acetate	123-86-4
Carbon Black	1333-86-4
Ethylene glycol mono butyl ether	111-76-2
Phenylethane	100-41-4

SARA 304 Extremely Hazardous Substances Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

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

SARA 313 :

This product contains:	Chemical CAS#
Propane Blend	74-98-6

Acetone	67-64-1
Methyl Ethyl Ketone	78-93-3
Acetic acid, methyl ester methyl ,acetate	79-20-9
Dipropylene Glycol Methyl Ether Acetate	88917-22-0
n-Butyl Acetate	123-86-4

CLEAN AIR ACT :

This product contains:	Chemical CAS#
Diethylene glycol n-butyl ether	112-34-5
Toluene	108-88-3
Formaldehyde	50-00-0
Phenylethane	100-41-4
Benzene	71-43-2
Cumene	98-82-8

INTERNATIONAL REGULATIONS

CLASSIFICATION ACCORDING TO REGULATION (EC) No. 1272/2008 (CLP) :

Flam. Liq. Cat. 2; H223
 Eye Irrit. Cat. 2; H319
 STOT SE Cat. 3; H336

NATIONAL REGULATIONS

Indicates a chemical listed by IARC as a possible carcinogen.

STATE REGULATIONS

CALIFORNIA PROPOSITION 65

*This product contains (a) chemical (s) known to the State of California to cause cancer.

#This product contains (a) chemical (s) known to the State of California to be carcinogenic.

+This product contains (a) chemical (s) known to the State of California to cause birth defects or other reproductive harm.

Massachusetts Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1
Methyl Ethyl Ketone	78-93-3
Acetic acid, methyl ester methyl ,acetate	79-20-9
n-Butyl Acetate	123-86-4
Carbon Black	1333-86-4
Methyl Amyl Ketone	110-43-0
Ethylene glycol mono butyl ether	111-76-2
Phenylethane	100-41-4
Benzene	71-43-2
Cumene	98-82-8

Pennsylvania Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1

Methyl Ethyl Ketone	78-93-3
Acetic acid, methyl ester methyl acetate	79-20-9
n-Butyl Acetate	123-86-4
Methyl Ethyl Ketoxime	96-29-7
Diethylene glycol n-butyl ether	112-34-5
Carbon Black	1333-86-4
Methyl Amyl Ketone	110-43-0
P.M. Acetate	108-65-6
Ethylene glycol mono butyl ether	111-76-2
Toluene	108-88-3
Phenylethane	100-41-4
Cumene	98-82-8

New Jersey Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1
Methyl Ethyl Ketone	78-93-3
Acetic acid, methyl ester methyl acetate	79-20-9
n-Butyl Acetate	123-86-4
Methyl Ethyl Ketoxime	96-29-7
Diethylene glycol n-butyl ether	112-34-5
Carbon Black	1333-86-4
Methyl Amyl Ketone	110-43-0
P.M. Acetate	108-65-6
Ethylene glycol mono butyl ether	111-76-2
Phenylethane	100-41-4
Cumene	98-82-8

16. OTHER INFORMATION

Other Product Information

% Volatile by Volume: 91.83

% Solids by volume: 8.17

% Exempt by Volume: 30.63

% Volatile by Weight: 84.05

% Solids by Weight: 15.95

% Exempt by Weight: 32.63

VOC CONTENT:

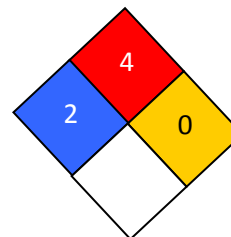
Excluding Exempt VOC: 605

Including Exempt VOC: 420

HMIS RATING

Health :	2*
Flammability :	4
Reactivity :	0
Personal Protection :	H

NFPA CODES



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