SAFETY DATA SHEET

DATE ISSUED :	8/14/2015
SDS REF. No :	4860-52

4860-52 420 VOC GREEN WASH PRIMER

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 4860-52 420 VOC GREEN WASH PRIMER

PRODUCT CODE: 4860-52
PRODUCT USE: Industrial Solventborne 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 Transportation) : 1(202)483-7616
WEB: WWW.CARDINALPAINT.COM

2. HAZARDS IDENTIFICATION

PICTOGRAMS

SIGNAL WORD : DANGER

HAZARD STATEMENTS : H226 Flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS : 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.
P273 Avoid release to the environment.
Collect spillage.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P403 Store in a well-ventilated place.
R40 Limited evidence of a carcinogenic effect.
S36 Wear suitable protective clothing.
S37 Wear suitable gloves.
P233 Keep container tightly closed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	CAS Number	
Acetone	55% - 60%	67-64-1	
Bisphenol A	5% - 10%	80-05-7	

Glycol Ether PM	1% - 5%	107-98-2	
Zinc Oxide	1% - 5%	1314-13-2	
Methyl Isobutyl Ketone	1% - 5%	108-10-1	
Dimolybdenum trizinc nonaoxide	1% - 5%	22914-58-5	
Carbon Black	0.50% - 0.99%	1333-86-4	

4. FIRST AID MEASURES

Description of first and 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 my 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.

ENVIROMENTAL 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

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
Aliphatic Solvent(64742-47-8)		
USA ACGIH	ACGIH (TLV) TWA	200 mg/m3
USA NIOSH	NIOSH REL (ST)	10 mg/m3
USA NIOSH	NIOSH REL (TWA)	5 mg/m3
USA OSHA	OSHA OEL (TLV) TWA Table Z-1	500 ppm, 2,000 mg/m3
USA OSHA	OSHA OEL Table Z-1	5 mg/m3
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
Dimolybdenum trizinc nonaoxide(22914-58-5)		
USA ACGIH	ACGIH (TWA) Inhalable	10 mg/m3
USA ACGIH	ACGIH (TWA) Respirable	3 mg/m3
USA OSHA	OSHA (OEL) Total dust	15 mg/m3
Glycol Ether PM(107-98-2)		
USA ACGIH	ACGIH (TLV) (TWA)	50 ppm
USA ACGIH	ACGIH (TLV) STEL	100 ppm
USA NIOSH	NIOSH (TLV) ST	150 ppm, 540 mg/m3
USA NIOSH	NIOSH (TWA)	100 ppm, 360 mg/m3
Lithium Chloride(7447-41-8)		
USA OSHA	OSHA	Not Established.
Methyl Isobutyl Ketone(108-10-1)		
USA ACGIH	ACGIH TLV (ppm)	75 ppm
USA NIOSH REL	NIOSH STEL (ppm)	75 ppm
USA NIOSH REL	NIOSH TWA (ppm)	50 ppm
USA OSHA	OSHA TWA (ppm)	100 ppm
n-Methyl-2-pyrrolidone(872-50-4)		
USA ACGIH	ACGIH PEL	N/E
USA OSHA	OSHA TWA	N/E
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
Phosphoric Acid(7664-38-2)		
USA ACGIH	ACGIH (TLV) STEL	3 mg/m3
USA ACGIH	ACGIH (TLV) TWA	1 mg/m3
USA NIOSH	NIOSH (TWA) REL	1 mg/m3
USA NIOSH	NIOSH (TWA) ST	3 mg/m3

USA OSHA	OSHA (TWA) Table Z-1	1 mg/m3
Pseudocumene(95-63-6)		
USA NIOSH	NIOSH (TWA) REL	25 ppm, 125 mg/m3
Xylene(1330-20-7)		
USA ACGIH	ACGIH STEL	150 ppm
USA ACGIH	ACGIH TWA	100 ppm
USA OSHA	OSHA TWA (Table Z-1)	100 PPM, 435 mg/m3
Zinc Oxide(1314-13-2)		
USA ACGIH	ACGIH (TLV) STEL	10 mg/m3
USA ACGIH	ACGIH (TLV) TWA	2 mg/m3
USA NIOSH	NIOSH (REL) C	15 mg/m3
USA NIOSH	NIOSH (REL) ST	10 mg/m3
USA NIOSH	NIOSH (REL) TWA	5 mg/m3
USA OSHA	OSHA (TWA) Table Z-1	5 mg/m3

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	**:**	277.0 deg F TO 281.0 deg F
Flash point	**:**	FLASHPT deg F
Lower explosion limit	**:**	LEL
Upper explosion limit	**:**	UEL
Vapor pressure	**:**	185 mm Hg
Vapor density	**:**	Heavier than air
Relative density	**:**	No data available.
Density	**:**	8.1532
Solubility	**:**	No data available.
Partion coefficient: n-octanol/water	**:**	No data available.
Autoignition temperature	**:**	No data available.
Decomposition temperature	**:**	No data available.

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 (NOx), dense black smoke.

11. TOXICOLOGICAL INFORMATION

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 nercotic 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: dod 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 Lymphoma, 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 fetal 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; Tetragenicity: NOAEC: 2,200 ppm; Embryo-fetal 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 sensitization	Test type: Maximization test, Species: guinea pig, Assessment: Does not cause skin sensitization. Result: Did not cause sensitization 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 (vapor); Assessment: May cause drowsiness or dizziness.
STOT- repeated exposure	No data available.
Aliphatic Solvent(64742-47-8)	
Acute Dermal toxicity	No data available.
Acute Inhalation toxicity	No data available.
Acute toxicity	No data available.
Additional Information	RTECS: Not available Prolonged or repeated exposure to skin causes defatting and dermatitis., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Aspiration hazard	No data available.
Carcinogenicity	IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Distillates (petroleum), hydrotrated light, kerosene - unspecified) 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	Reverse mutation assay S. typhimurium Result: negative
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Draize Test - Guinea pig Result: Does not cause skin sensitization.
Serious eye damage/eye irritation	Eyes - Rabbit Result: No eye irritation
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation - 4 h
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
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) .l
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/m3 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 toxic kinetic 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 fetal 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	invitro assay, S. trphimurium, 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.
Glycol Ether PM(107-98-2)	
Additional Information	RTECS: UB7700000 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
Additional Information	RTECS: UB7700000 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	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. 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	No data available
LC50 Inhalation - Rat - Inhalation	10000 ppm, - Rat - 5 h
LD50 Dermal - Rabbit - Dermal	13,000 mg/kg, Rabbit
LD50 Oral - Mouse - Acute Toxicity	11,700 mg/kg, Behavioral: Convulsions or effect on seizure threshold. Behavioral: Ataxia. Lungs, Thorax, or Respiration:Dyspnea.
Reproductive toxicity	No data available.
Serious eye damage/eye irritation	Eyes - Rabbit Result: Mild eye irritation - 24 h Respiratory or skin sensitization
Skin corrosion/irritation	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.
Lithium Chloride(7447-41-8)	
Additional Information	RTECS: OJ5950000 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	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.
Dermal	No data available.
Germ cell mutagenicity	No data available.
Inhalation	No data available.
LD50 Oral - Rat - Acute Toxicity	526 mg/kg, Oral - Rat
Reproductive toxicity	No data available.
Respiratory or skin sensitization	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	No data available.
Methyl Isobutyl Ketone(108-10-1)	
Carcinogenicity Data	Methyl Isobutyl Ketone: Possibly carcinogenic to humans. (IARC-2B)
LC50 (Rat, 4) Inhalation	8.2 - 16.4 mg/l
LD50 (Rabbit) Dermal	>1 600 mg/kg
LD50 (Rat) Oral	2 080 - 4 600 mg/kg
Mutagenicity Data	Mutagenicity tests in animals have been negative or inconclusive. See "Other Studies Relevant to Material".
Other Studies Revelant Material	According to the International Agency for Research on Cancer (IARC), methyl isobutyl ketone is possibly carcinogenic to humans. (IARC-2B) MIBK was not teratogenic, embryotoxic or fetotoxic following exposures that did not produce maternal toxicity. Rats and mice were exposed to 300, 1000 or 3000 ppm MIBK on days 6-15 of pregnancy. Exposures to 3000 ppm produced maternal and fetal toxicity, but no teratogenicity. There was no maternal toxicity, embryotoxicity or teratogenicity at 300 or 1000 ppm. Findings of fetotoxicity at 300 ppm were complicated by abnormal litter sizes and were determined not to be treatment related. (4) MIBK produced negative results in the micronucleus cytogenic assay in mice in vivo. Most mutagenicity tests have produced negative results.
Reproductive Data	No adverse reproductive effects are anticipated.
Respiratory / Skin Sensitization Data	None known.
Synergistic Materials	In studies with mice, MIBK prolonged the loss of righting reflex induced by ethanol. In animal studies, MIBK has been shown to potentiate the hepatotoxicity of haloalkanes, such as chloroform, carbon tetrachloride and 1,2-dichlorobenzene. Combined exposure to methyl ethyl ketone and MIBK caused increased behavioral responses in baboons.
Teratogenicity Data	No adverse teratogenic effects are anticipated. See "Other Studies Relevant to Material".
n-Methyl-2-pyrrolidone(872-50-4)	

Aspiration Hazard	Not Applicable.
Assessment other acute effects	Assessment of STOT single: Causes temporary irritation of the respiratory tract. Irritation / corrosion Assessment of irritating effects: Eye contact causes irritation. Skin contact causes irritation. Causes temporary irritation of the respiratory tract. EU-classification Skin Species: rabbit Result: Slightly irritating. Method: Draize test Literature data. The European Union (EU) has classified this substance with 'Irritating to skin' (R38). Eye Species: rabbit Result: Irritant. Method: Draize test Literature data. Sensitization Assessment of sensitization: Skin sensitizing effects were not observed in animal studies. Mouse Local Lymph Node Assay (LLNA) Species: mouse Result: Non-sensitizing. Method: OECD Guideline 429 The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Carcinogenicity	Assessment of carcinogenicity: In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed. In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed. In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans. The whole of the information assessable provides no indication of a carcinogenic effect.
Genetic toxicity	Assessment of mutagenicity: The substance was not mutagenic in bacteria. No mutagenic effect was found in various tests with mammalian cell culture and mammals.
LC50 Inhaliation - Rat	> 5.1 mg/l (OECD Guideline 403) Exposure time: 4 h An aerosol was tested. Limit concentration test only (LIMIT test). No mortality was observed.
LD50 Dermal - Rat	5,000 mg/m3; Species: rat (male/female) Value: > 5,000 mg/kg (OECD Guideline 402) Literature data.
LD50 Oral - Rat	4,150 mg/kg (OECD Guideline 401) Literature data.
Repeated dose toxicity	Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The substance may cause damage to the testes after repeated inhalation of high doses. Experiment
Reproductive toxicity	Assessment of reproduction toxicity: As shown in animal studies, the product may cause damage to the testes after repeated high exposures that cause other toxic effects.
Symptoms of Exposure	Medical conditions aggravated by overexposure Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.
Teragenicity	Assessment of teratogenicity: The substance caused malformations/developmental toxicity in laboratory animals.
phenol, 4-(1-1-dimethylethyl)-, polymer with 2-(chromomethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol](80-05-7)	
Acute toxicity estimates	No data available.
Aspiration hazard	No data available.
Carcinogenicity	Bisphenol A diglycidyl ether resin OECD 453 Combined Chronic Toxicity/Carcinogenicity Studies Rat - Male, Female 15 mg/kg 2 years; 7 days per week Negative - Oral -NOAEL, OECD 453 Combined Chronic Toxicity/Carcinogenicity Studies Rat - Female 1 mg/kg 2 years; 5 days per week Negative - Dermal - NOEL, OECD 453 Combined Chronic Toxicity/Carcinogenicity Studies Mouse - Male 0.1 mg/kg 2 years; 3 days per week Negative - Dermal - NOEL
Delayed and immediate effects and also chronic effects from short and long term exposure	Short term exposure- Potential immediate effects- Not available. - Potential delayed effects- Not available. Long term exposure- Potential immediate effects- Not available. - Potential delayed effects- Not available.
Irritation/Corrosion	No data available.
LD50 Dermal - Rat- Male & Female	>2,000 mg/kg, Oral, Rat - Female (OECD 402 Acute Dermal Toxicity)
LD50 Oral - Rat-Female - Acute Toxicity	>2,000 mg/kg, Oral, Rat - Female (OECD 420 Acute Oral Toxicity - Fixed Dose Method)
Mutagenicity	Bisphenol A diglycidyl ether Resin Experiment: In vitro Positive, Subject Bacteria Metabolic activation +/- Experiment In vitro Positive, Subject Mammalian-Animal Cell Somatic Metabolic activation: +/- Experiment: In vivo Negative, Subject Mammalian-Animal Cell Germ Experiment In vivo Negative, Subject Mammalian-Animal Cell Somatic Negative
Potential acute health effects	Eye contact- No known significant effects or critical hazards. Inhalatoin- No known significant effects or critical hazards. Skin conatct- No known significant effects or critical hazards. Ingestion- No known significant effects or critical hazards.
Potential chronic health effects	Product/ingredient name Test Endpoint Species Result General- No known significant effects or critical hazards. Carcinogenicity- No known significant effects or critical hazards. Mutagenicity- No known significant effects or critical hazards. Teratogenicity- No known significant effects or critical hazards. Developmental effects- No known significant effects or critical hazards. Fertility effects- No known significant effects or critical hazards

Reproductive toxicity	Bisphenol A diglycidyl ether resin OECD 416 Two-Generation Reproduction Toxicity Study Rat - Male,
Sensitization	No data available.
Specific target organ toxicity (repeated exposure)	No data available.
Specific target organ toxicity (single exposure)	No data available.
Symptoms related to the physical, chemical and toxicological characteristics	Eye contact- No specific data. Inhalation No specific data. Skin contact- No specific data. Ingestion- No specific data.
Teratogenicity	Bisphenol A diglycidyl ether resin OECD 414 Prenatal Developmental Toxicity Study Rat - Female Negative - Oral, EPA CFR Rabbit - Female Negative - Dermal, OECD 414 Prenatal Developmental
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 neoplasm's, 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 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 fetal weight. Reduced offspring weight gain. Method: OECD Test Guideline 415 Result: No reproductive effects. GLP: yes Effects on fetal 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.
Phosphoric Acid(7664-38-2)	
Additional Information	RTECS: TB6300000 burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, May cause cyanosis. Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence.
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	No data available.
Inhalation:	No data available.
LD50 Dermal - Rabbit	2,740 mg/kg Remarks: Behavioral: Somnolence (general depressed activity). Behavioral: Excitement. No data available.
LD50 Oral - Rat - Acute toxicity	> 5,000 mg/kg, (OECD Test Guideline 423),
Reproductive toxicity	No data available.
Respiratory or skin sensitization	No data available.
Serious eye damage/eye irritation	Eyes - Rabbit Result: Corrosive
Skin corrosion/irritation	Skin - Rabbit Result: Causes burns. - 24 h
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
Pseudocumene(95-63-6)	
Additional Information	RTECS: DC3325000 prolonged or repeated exposure can cause:, narcosis, Bronchitis., Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Central nervous system
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.
Dermal:	No data available
Germ cell mutagenicity	in vitro assay S. typhimurium Result: negative Mutagenicity (micronucleus test) Rat - male and female - Bone marrow Result: negative
Inhalation:	No data available.
LD50 Oral - Rat - Acute toxicity	6,000 mg/kg, Rat - male.
Reproductive toxicity	No data available.
Respiratory or skin sensitization	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	No data available.
Xylene(1330-20-7)	
Acute dermal toxicity	Acute toxicity estimate : 1,100 mg/kg Method: Expert judgement.
Acute inhalation toxicity	Acute toxicity estimate, 4631 ppm Exposure time, 4 h Test atmosphere: gas Method; Calculation method.
Acute toxicity Product	Acute oral toxicity : Acute toxicity estimate : 3,523 mg/kg Method: Calculation method.
Aspiration Toxicity	May be fatal if swallowed and enters airways.
Carcinogenicity	Species: mouse, (male and female) Application Route: Oral Exposure time: 103 wk Dose: 0, 500 or 1000 mg/kg Frequency of Treatment: 5 days/week Method: Directive 67/548/EEC, Annex V, B.32. Result: did not display carcinogenic properties GLP: No data available, Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.
Germ cell mutagenicity	Test Type: Chromosome aberration test in virto. Test Species: Chinese hamster ovary (CHO) Metabolic Activation: With and without metabolic activation. Method Mutagenicity (in vitro mammalian cytogenetic test) Result: Negative. Test Type: Sister chromatid exchange assay in mammalian cells.
Germ cell mutagenicity Assessment	Animal testing did not show any mutagenic effects.
LC50 (rat, male) Inhalation	6700 ppm Exposure time: 4 h Method: Directive 67/548/EEC, Annex V, B.2. GLP: No data available Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. Remarks: Acutely Toxic Category 4
LC50 (rat, male) Oral	3,523 mg/kg Method: EU Method B.1 (Acute Toxicity, Oral) Target Organs: Kidney, Bladder GLP: no
Repeated dose toxicity	Species: rat, male and female NOAEL: 250 mg/kg Application Route: Oral Exposure time: 103 wk Number of exposures: 5 d/wk Dose: 0, 250 or 500 mg/kg Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Reproductive toxicity	Effects on fertility : Test Type: Two-generation study Species: rat, male and female Application Route: Inhalation Dose: 0, 25, 100 and 500 ppm Duration of Single Treatment: 6 h Frequency of Treatment: 7 days/week General Toxicity - Parent: NOAEC: > 500 ppm General Toxicity F1: NOAEC: > 500 ppm Early Embryonic Development: NOAEC: > 500 ppm Result: No reproductive effects.Effects on fetal development : Species: rat Application Route: Inhalation Dose: 0, 100, 500, 1000 or 2000 ppm Duration of Single Treatment: 14 d Frequency of Treatment: 6 hr/day General Toxicity Maternal: NOAEC: 500 ppm Teratogenicity: NOAEC: > 2,000 Developmental Toxicity: NOAEC: 100 ppm Result: No teratogenic effects., Developmental toxicity occurred at maternal toxicity dose levels Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility. Damage to fetus not classifiable
Respiratory or skin sensitization	Remarks: No data available
Serious eye damage/eye irritation	Species: rabbit Result: Mild eye irritation
Skin corrosion/irritation	Species: rabbit Exposure time: 24 h Result: Irritating to skin Remarks: Skin irritation, Category 2
STOT - repeated exposure	Target Organs: Liver, Kidney, Central nervous system Assessment: May cause damage to organs through prolonged or repeated exposure.
STOT - single exposure	No data available.
Zinc Oxide(1314-13-2)	
Carcinogenicity	No data available.
Dermal	No data available.
LC50 Inhalation - Mouse	2,500 mg/m3, Mouse
LD50 Oral - Mouse - Acute toxicity	7,950 mg/kg, Oral - Mouse
Mutagenicity	No data available.
Reproductive toxicity	No data available.
Serious eye damage/eye irritation	No data available.
Skin corrosion/irritation	No data available.
Teratogenicity	No data available.

12. ECOLOGICAL INFORMATION

Acetone(67-64-1)	
Bioacculative 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 Stratpspheric 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
Aliphatic Solvent(64742-47-8)	
Bioaccumulative potential	No data available.
EC50 (Daphnia Magna) Toxicity to daphnia and other aquatic invertebrates	1.4 mg/l - 48 h, - Daphnia magna (Water flea), (OECD Test Guideline 202)
LC50 (Rainbow trout) Toxicity to fish	2.9 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. No data available.
Persistence and degradability	No data available.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
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 vapor 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
Glycol Ether PM(107-98-2)	
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No data available.
Persistence and degradability	No data available.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Toxicity	No data available.
Lithium Chloride(7447-41-8)	
Bioaccumulative potential	No data available.
EC50 - Daphnia magna (Water flea) - to daphnia and other aquatic invertebrates	1.2 mg/l - 64 h, Daphnia magna (Water flea)
LC50 - Ptychocheilus lucius - Toxicity to fish	17 mg/l - 96 h, -Ptychocheilus lucius
Mobility in soil	No data available.
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.
Persistence and degradability	No data available.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Methyl Isobutyl Ketone(108-10-1)	
Deactivating Chemicals: None required.	None required.
Disposal of Packaging	Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioned. Do not expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Do not dispose of package until thoroughly washed out.
EC50 (Daphnia Magna)	>200 mg/l (48 h)
Ecotoxicity	Low acute toxicity to aquatic organisms.
Environmental Fate	Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers. Methyl Isobutyl Ketone: This product is biodegradable. This product does not bioaccumulate in aquatic or terrestrial food chains.
LC50 (Fathead Minnow)	>179 mg/l (96 h)
Safe Handling of Residues	See "Waste Disposal Methods"
Waste Disposal Methods	. Reevaluation of the product may be required by the user at the time of disposal since the product uses, transformations, mixtures and processes may influence waste classification. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.
n-Methyl-2-pyrrolidone(872-50-4)	

Additional information	Sum parameter Chemical oxygen demand (COD): (DIN 38409 Part 41) approx. 1,600 mg/g Biochemical oxygen demand (BOD) Incubation period 5 d: < 2 mg/g Absorbable organically-bound halogen (AOX): This product contains no organically-bound halogen.
Bioaccumulative potential	Assessment bioaccumulation potential Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.
EC50 (Algae)	> 500 mg/l, (72 h), Scenedesmus subspicatus (DIN 38412 Part 9) The details of the toxic effect relate to the nominal concentration.
EC50 (Daphnia)	> 1,000 mg/l, (24 h), Daphnia magna (DIN 38412 Part 11, static) The details of the toxic effect relate to the nominal concentration.
LD50 (fish)	> 500 mg/l, Salmo gairdneri, syn. O. mykiss (static) The details of the toxic effect relate to the nominal concentration.
Microorganisms/Effect on activated sludge	Toxicity to microorganisms DIN EN ISO 8192 aquatic activated sludge, industrial/EC50 (0.5 h): > 600 mg/l The details of the toxic effect relate to the nominal concentration.
Mobility in soil	Assessment transport between environmental compartments The substance will rapidly evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.
Persistence and degradability	Assessment biodegradation and elimination (H2O) Readily biodegradable (according to OECD criteria). Elimination information 73 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, Inoculum conforming to MITI requirements (OECD 301C)) Readily biodegradable (according to OECD criteria). Assessment of stability in water In contact with water the substance will hydrolyse slowly.
phenol, 4-(1-1-dimethylethyl)-, polymer with 2-(chromomethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol](80-05-7)	
Bioaccumulative potential	LogP ow - , BCF- 31 days, Potential- low.
Mobility in soil	Soil. Water partition coefficient (Koc) - 445, Other adverse effects - No known significant effects or critical hazards.
Oral, Inhalation or Dermal Toxicity	No data available.
Other ecological information	BOD5- Not determined., COD- Not determined., TOC- Not determined.
Persistence and degradability	OECD Derived from OECD 301F (Biodegradation Test), 28 days - 5%, Conclusion/Summary - Not readily biodegradable.
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.
Phosphoric Acid(7664-38-2)	
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	May be harmful to aquatic organisms due to the shift of the pH.
Persistence and degradability	No data available.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Toxicity	No data available.
Pseudocumene(95-63-6)	
Bioaccumulative potential	No data available.
EC50 - Daphnia magna (Water flea) - Toxicity to daphnia and other aquatic invertebrates static test	3.6 mg/l - 48 h (OECD Test Guideline 202), Daphnia magna (Water flea)
LC50 - Pimephales promelas (fathead minnow) - Toxicity to fish	7.72 mg/l - 96.0 h, Pimephales promelas (fathead minnow)
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	No data available.

Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Xylene(1330-20-7)	
Bioaccumulative potential	Partition coefficient: noctanol/water : log Pow: 2.77 - 3.15
EC50 (Pseudokirchneriella subcapitata)	4.36 mg/l End point: Growth rate Exposure time: 73 h Test Type: static test Analytical monitoring: yes
IC50 (Daphnia magna (Water flea))	1 mg/l Exposure time: 24 h Test Type: static test Test substance: Information given is based on data obtained from similar substances. Method: OECD Test Guideline 202 GLP
LC50 (Oncorhynchus mykiss (rainbow trout))	2.6 mg/l Exposure time: 96 h Test substance: Information given is based on data obtained from similar substances. Method: OECD Test Guideline 203 GLP: No data available
Mobility in soil	No data available.
Persistence and degradability	Biodegradability : Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 72 % Exposure time: 20 d
Zinc Oxide(1314-13-2)	
EC50 Algae - Psedudokirchneriella subcapitata - Toxicity to	0.042 mg/l Fresh water, 72 h, Algae - Psedudokirchneriella subcapitata
LC50 Daphnia magna (Water flea) - Toxicity to daphnia and other aquatic invertebrates	98 ug/l, Fresh water, 48 h, Daphnia magna (Water flea)
LC50 Oncorhynchus mykiss (rainbow trout)	1.1 to 2.5 ppm, Fresh water, 96 h, Oncorhynchus mykiss (rainbow trout)
Other adverse effects	Very toxic to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	No data available.

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 RESTRCITIONS THAT MAY APPLY.**

USDOT GROUND
DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME (DOT) : Paint, flammable liquid
HAZARDS CLASS : 3
UN/NA NUMBER : UN1263
PACKING GROUP : PG II
EMERGENCY RESPONSE GUIDE (ERG) : 128

IATA (AIR)
DOT (INTERNATIONAL AIR TRANSPORTATION ASSOCIATION)
PROPER SHIPPING NAME : Paint, flammable liquid
HAZARDS CLASS : 3
UN/NA NUMBER : UN1263
PACKING GROUP : PG II
EMERGENCY RESPONSE GUIDE (ERG) : 128

IMDG (OCEAN)
PROPER SHIPPING NAME : Paint, flammable liquid
HAZARDS CLASS : 3
UN/NA NUMBER : UN1263
PACKING GROUP : PG II
EMERGENCY RESPONSE GUIDE (ERG) : 128

MARINE POLLUTANT: Yes

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#
Carbon Black	1333-86-4
Xylene	1330-20-7
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 AMENDMENRS AND REAUTHORIZATION ACT)
SARA 311/312 Hazards : Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313 :

This product contains:	Chemical CAS#
^Acetone	67-64-1
*Bisphenol A	80-05-7
Glycol Ether PM	107-98-2
*Zinc Oxide	1314-13-2
*Methyl Isobutyl Ketone	108-10-1
*Dimolybdenum trizinc nonaoxide	22914-58-5
^Carbon Black	1333-86-4

CLEAN AIR ACT :

This product contains:	Chemical CAS#
Bisphenol A	80-05-7
Methyl Isobutyl Ketone	108-10-1
Cumene	98-82-8
Phenylethane	100-41-4

INTERNATIONAL REGULATIONS

CLASSIFICATION ACCORDING TO REGULATION (EC) No. 1272/2008 (CLP) :
Flam. Liq. 2 H226
Eye Irrit. 2 H319
STOT SE 3 H336

NATIONAL REGULATIONS

This product contains:	Chemical CAS#
#Carbon Black	1333-86-4

# Indicates a chemical listed by IARC as a possible carcinogen.

STATE REGULATIONS
CALIFORNIA PROPOSITION 65

This product contains:	Chemical CAS#
*Methyl Isobutyl Ketone	108-10-1
#Dimolybdenum trizinc nonaoxide	22914-58-5
*Aliphatic Solvent	64742-47-8
+n-Methylpyrrolidone	872-50-4
*Cumene	98-82-8
*Phenylethane	100-41-4

*****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
Glycol Ether PM	107-98-2
Zinc Oxide	1314-13-2
Carbon Black	1333-86-4
Aliphatic Solvent	64742-47-8
Pseudocumene	95-63-6
Phosphoric Acid	7664-38-2
Xylene	1330-20-7
Cumene	98-82-8
Phenylethane	100-41-4

Pennsylvania Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1
Glycol Ether PM	107-98-2
Zinc Oxide	1314-13-2
Dimolybdenum trizinc nonaoxide	22914-58-5
Carbon Black	1333-86-4
Aliphatic Solvent	64742-47-8
Pseudocumene	95-63-6
Phosphoric Acid	7664-38-2
Xylene	1330-20-7
Cumene	98-82-8
Lithium Chloride	7447-41-8
Phenylethane	100-41-4

New Jersey Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1
Glycol Ether PM	107-98-2
Zinc Oxide	1314-13-2
Dimolybdenum trizinc nonaoxide	22914-58-5

Carbon Black	1333-86-4
Aliphatic Solvent	64742-47-8
Pseudocumene	95-63-6
Phosphoric Acid	7664-38-2
Xylene	1330-20-7
Cumene	98-82-8
Lithium Chloride	7447-41-8
Phenylethane	100-41-4

16. OTHER INFORMATION

Other Product Information

% Volatile by Volume: 81.75
% Solids by volume: 18.25
% Exempt by Volume: 72.39

% Volatile by Weight: 66.90
% Solids by Weight: 33.10
% Exempt by Weight: 58.57

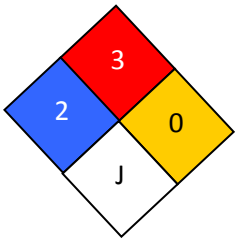
VOC CONTENT:

Excluding Exempt VOC: 295
Including Exempt VOC: 81

HMIS RATING

Health :	2*
Flammability :	3
Reactivity :	0
Personal Protection :	J

NFPA CODES



MANUFACTURER DISCLAIMER : The information contained in this Safety Data Sheet is considered to be true and accurate. Cardinal Industrial Finishes makes no warranties, expressed or implied, as to the accuracy and adequacy of this information. This data is offered solely for the user's consideration, investigation and verification.