SAFETY DATA SHEET

DATE ISSUED :	5/21/2016
SDS REF. No :	4400 SERIES

4400 SERIES GLOSS AIR DRY ENAMEL HIGH SOLIDS ALKYD

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 4400 SERIES GLOSS AIR DRY ENAMEL HIGH SOLIDS ALKYD

PRODUCT CODE: 4400 SERIES
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.

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	
Acetic Acid, tert-butyl ester	20% - 25%	540-88-5	
Acetone	15% - 20%	67-64-1	

n-Butyl Acetate	5% - 10%	123-86-4	
Methyl Amyl Ketone	1% - 5%	110-43-0	
Amorphous Silica	1% - 5%	7631-86-9	

The follow substances may be present in varying quantities depending on color.

Titanium Dioxide	0% - 60%	13463-67-7	
Carbon Black	0% - 40%	1333-86-4	

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 advice 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.

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

2-Ethylhexanoic acid(149-57-5)		
USA ACGIH	ACGI(TLV) RWA	5 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
Aluminum Hydroxide(21645-51-2)		
USA ACGIH	ACGIH (TLV) TWA	10 mg/m3 (Total dust), 3 mg/m3 (Respirable fraction)
USA OSHA	OSHA (PEL) TWA	15 mg/m3 (Tptal dust), 5 mg/m3 (Respirable fraction)
Butyl Alcohol(71-36-3)		
USA ACGIH	ACGIH (TLV) TWA	20 ppm
USA NIOSH	NIOSH (REL) C	50 ppm, 150 mg/m3
USA OSHA	OSHA (OEL) TWA Table Z-1	100 ppm, 300 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
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 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
Titanium Dioxide(13463-67-7)		
PEL (Permissible Exposure Limit)	OSHA TWA	15 mg/m3
TLV	ACGIH TWA	10 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	**:**	133.0 deg F TO 305.0 deg F
Flash point	**:**	-4.00 deg F
Lower explosion limit	**:**	1.0
Upper explosion limit	**:**	12.8
Vapor pressure	**:**	185 mm Hg
Vapor density	**:**	Heavier than air
Relative density	**:**	No data available.
Density	**:**	8.7961
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

1,10-Phenanthroline(66-71-7)	
LD50 Oral - Rat - Acute toxicity	132 mg/kg
2-Ethylhexanoic acid(149-57-5)	
Additional Information	RTECS: MO7700000 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 components 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	Human lymphocyte Sister chromatic exchange
Inhalation	No data available.
LD50 Dermal - Rabbit	1,142 mg/kg, Dermal, Rabbit
LD50 Oral - Rat - Acute toxicity	3,000 mg/kg, Oral, Rat
Reproductive toxicity	Suspected human reproductive toxicant no data available no data available Developmental Toxicity - rat - Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

	Developmental Toxicity - rat - Oral Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Urogenital system.
Respiratory or skin sensitization	No data available.
Serious eye damage/eye irritation	Eyes - rabbit Result: Severe eye irritation
Skin corrosion/irritation	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Specific target organ toxicity - single exposure	No data available.
4-Methyl, 1-3 Dioxolan-2-one(108-32-7)	
Additional Information	RTECS: FF9650000 Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical,
Aspiration hazard	No data available.
Carcinogenicity	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	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Inhalation	No data available.
LD50 Dermal - Rabbit	> 2,000 mg/kg, Dermal Rabbit, (OECD Test Guideline 402)
LD50 Oral - Rat - Acute toxicity	>5,000 mg/kg, Oral - Rat, (OECD Test Guideline 401)
Reproductive toxicity	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility.
Respiratory or skin sensitsation	Patch test on human volunteers did not demonstrate sensitization properties.
Serious eye damage/eye irritation	Eyes - Rabbit Result: Irritating to eyes. (OECD Test Guideline 405)
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation (Draize Test)
Specific target organ toxicity - repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Specific target organ toxicity - single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure.
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 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 sensitsation	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.
Aluminum Hydroxide(21645-51-2)	
Additional Information	RTECS: BD0940000 Nausea, Vomiting, and Constipation.
Aspiration hazard	No data available.
Carcinogenicity	IARC: No components 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	Mouse lymphocyte Result- negative Mutagenicity (micronucleus test) Rat - male Result: negative
Inhalation	No data available.
LD50 Oral - Rat - female - Acute toxicity	>5,000 mg/kg, Oral - Rat - female
Reproductive toxicity	No data available.
Respiratory or skin sensitization	Maximization Test (GPMT) - Guinea pig Result- Does not cause skin sensitization.(OECD Test Guideline 406)
Serious eye damage/eye irritation	Eyes - Rabbit Result: No eye irritation (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	No data available.
Amorphous Silica(7631-86-9)	
Additional toxicological information	The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and information provided to us.
Irritant of skin	Not irritating (rabbit) (OCED 404)
Irritatant of eyes	Not irritating (rabbit) (OCED 405)
LC0 - Inhalative	>140->2000 mg/m3 / 4 h (Rat) (OCED 403)
LD50 - Dermal - Rabbit	>5000 mg/kg (Rabbit)
LD50 - Oral - Rat	>5000 mg/kg (Rat) (OECD 401)
Other information - Oral	=> 1340 mg/kg/day
Sensitization	Not sensitizating (guinea pig) (OCED 406)
Butyl Alcohol(71-36-3)	
Additional Information	RTECS: EO1400000 drying, cracking of the skin, Skin irritation 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.
Germ cell mutagenicity	No data available
LC50 Inhalation Rat	8,000 ppm, Rat, 4 h
LD50 Dermal - Rabbit	3,400 mg/kg
LD50 Oral - Rat - Acute Toxicity	790 mg/kg, Liver:Fatty liver degeneration. Kidney, Urethra, Bladder: Other changes. Blood:Other changes.
Reproductively toxicity	No data available
Respiratory or skin sensitsation	No data available
Serious Eye Damage and Irritation	Serious eye damage,eye irritation Eyes - Rabbit Result: Blindness (OECD Test Guideline 405)
Skin corrosion/irritation	Rabbit Result: Skin irritation - 24 h
Specific target organ toxicity - repeated exposure	No data available
Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness or dizziness
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 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
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 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 (vapor) - 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 S. typhimurium Result: negative Drosophila melanogaster - 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.
Titanium Dioxide(13463-67-7)	
Carcinogenicity	In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50, 250 mg/m3 of respirable Ti02.
Dermal ALD (rabbit)	>10000 mg/m3
Eye irritation	slight irritation
Inhalation 4 h ALC	>6.82 mg/l
ORAL ALD (rat)	>2400 mg/kg
Sensitsation	Did not cause sensitsation on laboratory animals.
Skin irritation	slight irritation

12. ECOLOGICAL INFORMATION

2-Ethylhexanoic acid(149-57-5)	
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.
4-Methyl, 1-3 Dioxolan-2-one(108-32-7)	
Bioaccumulative potential	No data available.

EC10 - Pseudomonas putida	7,400 mg/l - 16 h, Pseudomonas putida, (DIN 38 412 Part 8)
EC50 - Daphnia magna - Toxicity to daphnia and other aquatic invertebrates static test	> 1,000 mg/l - 48 h, Daphnia magna (Water flea), (OECD Test Guideline 202)
EC50 - Desmodesmus subspicatus - Toxicity to algae	> 900 mg/l - 72 h, Desmodesmus subspicatus (green algae), (OECD Test Guideline 201)
LC50 - Cyprinids carpio (Carp) - Toxicity to fish semi-static test	- > 1,000 mg/l - 96 h, Cyprinids carpio (Carp)
Mobility in soil	No data available
Other adverse effects	No data available.
Persistence and degradability	Biodegradability Result: > 90 % - Readily biodegradable.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Acetone(67-64-1)	
Bioacculative potential	Parition 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 degrability	Biodegrability: Remarks: No data available
Toxicity to algae	Remarks: No data available
Aluminum Hydroxide(21645-51-2)	
Bioaccumulative potential	Inert material.
EC50 - Daphnia - Toxicity to daphnia and other aquatic invertebrates	>10,000 mg/l, Daphnia magna (Water flea) (OECD Test Guideline 202)
EC50 - Fish - Toxicity ro fish	>10,000 mg/l, Fish
Mobility in soil	Inert material.
NOEC - Toxicity to algae	>0.004 mg/l, 72 h, Pseudokirchneriella subcapitata (algae) - (OECD Test Guideline 201)
Other adverse effects	None known.
Persistence and degradability	Non-degradable
Amorphous Silica(7631-86-9)	
Additional ecological information	General notes: Do not allow product to reach ground water, water course or sewage system.
Bioaccumulative potential	No further revelent information available.
EC50 - Algae	>10000 mg/l (Scenedesmus subspicatus) (72 h) (OCED 201) comparable substance
EC50 - Daphnia magna	>1000 mg/l (Daphnia magna) (24 h) (OCED 202)
LCO - Zebra fish	10000 mg/l (zebra fish) (96 h) (static) (OCED203)
Mobility in soil	No further revelent information available.
Persistence and degrability	The product is chemically and biologically inert. By the insolubility in water there is a seperstion at every filtration and sedimentation process.
Butyl Alcohol(71-36-3)	
Bioaccumulative potential	Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l
EC50 Daphnia magna Toxicity to Daphnia and other aquatic invertebrates	1,983 mg/l - 48 h Daphnia magna (Water Flea)
LC50 Pimephales promelas - toxicity to fish	1,840 mg/l - 96 h, Pimephales promelas (fathead minnow)

Mobility in Soil	No data available
Other adverse effects	No data available
Persistence and degradability	No data available
Result of PBT and vPvB assessment not required/not conducted	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 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)
Methyl Amyl Ketone(110-43-0)	
Aquatic invertebrates	No data available.
Bioaccumulative potential	No data available.
Chronic Toxicity (Fish)	No data available.
ErC50 (Selenastrum 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 Ketoxime(96-29-7)	
Bioaccumulative potential	Bioaccumulation Cyprinids 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.
Titanium Dioxide(13463-67-7)	
LC50 fish	Fathead minnow 96 h >1000 mg/l

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 incenerate. 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) : Paint
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
HAZARDS CLASS : 3
UN/NA NUMBER : UN1263
PACKING GROUP : PG II
EMERGENCY RESPONSE GUIDE (ERG) : 128

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

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#
n-Butyl Acetate	123-86-4
Carbon Black	1333-86-4

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#
Acetic Acid, tert-butyl ester	540-88-5
Acetone	67-64-1
Titanium Dioxide	13463-67-7
n-Butyl Acetate	123-86-4
Methyl Amyl Ketone	110-43-0
Amorphous Silica	7631-86-9
Carbon Black	1333-86-4

CLEAN AIR ACT :

INTERNATIONAL REGULATIONS

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

NATIONAL REGULATIONS

This product contains:	Chemical CAS#
#Titanium Dioxide	13463-67-7
#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#
#2-Ethylhexanoic acid	149-57-5

*****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
n-Butyl Acetate	123-86-4
Methyl Amyl Ketone	110-43-0
Carbon Black	1333-86-4
Butyl Alcohol	71-36-3

Pennsylvania Right to Know

This product contains	Chemical CAS#
Acetone	67-64-1
Titanium Dioxide	13463-67-7
n-Butyl Acetate	123-86-4
Methyl Amyl Ketone	110-43-0

Amorphous Silica	7631-86-9
4-Methyl, 1-3 Dioxolan-2-one	108-32-7
Aluminum Hydroxide	21645-51-2
Carbon Black	1333-86-4
Methyl Ethyl Ketoxime	96-29-7
Butyl Alcohol	71-36-3
1,10-Phenanthroline	66-71-7
2-Ethylhexanoic acid	149-57-5

New Jersey Right to Know

This product contains	**Chemical CAS#**
Acetone	67-64-1
Titanium Dioxide	13463-67-7
n-Butyl Acetate	123-86-4
Methyl Amyl Ketone	110-43-0
Amorphous Silica	7631-86-9
4-Methyl, 1-3 Dioxolan-2-one	108-32-7
Aluminum Hydroxide	21645-51-2
Carbon Black	1333-86-4
Methyl Ethyl Ketoxime	96-29-7
Butyl Alcohol	71-36-3
1,10-Phenanthroline	66-71-7
2-Ethylhexanoic acid	149-57-5

16. OTHER INFORMATION

Other Product Information

% Volatile by Volume: 71.92
% Solids by volume: 28.08
% Exempt by Volume: 54.63

% Volatile by Weight: 57.28
% Solids by Weight: 42.72
% Exempt by Weight: 43.25

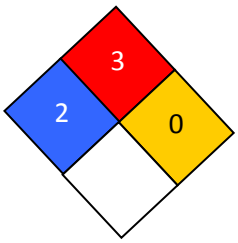
VOC CONTENT:

Excluding Exempt VOC: 326
Including Exempt VOC: 148

HMIS RATING

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

NFPA CODES



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