




























MATERIAL HAZARDS

HAZARD SYMBOLS

HAZARDS

Eye	 H  M  L
Nose	 H  M  L
Mouth	 H  M  L
Hand	 H  M  L
Poisonous	
Explosive	
Corrosive	
Carcinogen	
Flammable	
Fatal	
Narcotic	
Allergies	
DO NOT USE	
Toxic Gas	
Death	
Medical	
Toxic	
Cuts	
Burns	

SAFETY PRACTICES

Wet Mop	
Ventilation	
Dustmask	
Gloves	
Wash hands	
Avoid Ingestion	
Proper Storage	
Goggles	
Avoid Flame	

PAINTING

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PAINTING

In painting, one is exposed to many extremely toxic chemicals in paint pigments and many highly toxic vapours in solvents, esters, aromatic hydrocarbons and preservatives.








General safety practices would require a dust-free, clean environment, proper ventilation, and safe storage practices.

It is extremely important to avoid the inhalation of highly toxic dusts, pigments, and vapours, to avoid ingestion of any chemicals, and to protect the skin from any irritating substances.











PAINTING

MATERIAL	SYMBOL	HAZARD
<p><u>DISTILLATES</u></p> <p>Used in paint thinners and general solvents such as:</p> <p>gasoline mineral spirits kerosene petroleum ether phenol turpentine varsol</p>	<p> H</p> <p> H</p> <p> H</p> <p> M</p>	<p>Eye irritant</p> <p>Respiratory irritant may cause pulmonary edema and allergies</p> <p>Narcotics</p> <p>Skin irritant</p>
<p><u>DYES</u></p> <p>See FABRIC section</p>		
<p><u>EPOXY RESIN</u></p> <p>Used in:</p> <p>color resists casting laminating ashesive glue rubber cement</p>	<p> H</p> <p> H</p>	<p>Respiratory irritant and allergies</p> <p>Skin irritant and allergies</p>












PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
<div> <div>     </div> <div> <div>AVOID with elementary students</div> <div>Wear goggles</div> <div>AVOID inhalation</div> <div>Use with hood vent or outdoors</div> <div>Wear rubber gloves</div> </div> </div>		Use water-based paints
<div> <div>    </div> <div> <div>AVOID use with elementary students</div> <div>Wear goggles</div> <div>Use respirator, hood vent, or use outdoors</div> </div> </div>		








PAINTING

MATERIAL	SYMBOL	HAZARD
<u>PAINTS</u>	 H  H  M	<u>GENERAL</u> Pigment poisoning by inhalation of dust and sprays, by ingestion, and by contact with cuts and wounds
<u>ACRYLIC PAINTS</u> Contain: mercury preservatives ammonia formaldehyde	 H  L  H	Toxic by ingestion Allergic reactions Eye irritant Allergic reactions
<u>FRESCO PAINTS</u> Lime Lime water	 H  H  M  M	Corrosive to eyes and lungs Corrosive by ingestion Corrosive by skin contact





PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
<div>  </div> <div>  </div> <div>  </div> <div>  </div>	<p><u>GENERAL</u></p> <p>Use hood vent or proper respirator or a mixing box when mixing powder paints or using spray paints</p> <p>AVOID ingestion</p> <p>Keep all foods out of studio and avoid pointing brush with lips</p> <p>AVOID exposure of cuts and wounds. Use gloves to protect cuts</p> <p>Wash hands thoroughly after painting</p>	<p>Water-based paints are the least hazardous of the liquid paints</p> <p>Use coloured pencils, wax crayons or pastels for the very young students</p>
<div>  </div> <div>  </div> <div>  </div>	<p>AVOID with division 1 elementary students</p> <p>AVOID ingestion</p> <p>Wash hands thoroughly after use</p>	<p>Use powder paints mixed with laundry starch</p>
<div>  </div> <div>  </div> <div>  </div> <div>  </div>	<p>AVOID with elementary students</p> <p>Wear goggles</p> <p>AVOID inhalation</p> <p>Use with hood vent or outdoors</p> <p>Wear gloves</p>	<p>Use acrylic paints</p>







PAINTING

MATERIAL	SYMBOL	HAZARD
<u>OIL PAINTS</u> Pigment		Fume may cause respiratory irritation Pigment poisoning
Contain stabilizers and driers such as: cobalt lead manganese	<div>  M </div> <div>  H  H </div>	Respiratory irritant May effect skin and mucous membranes and possibly cause allergies Highly toxic if used as pure drier in printmaking
<u>PIGMENTS</u> Finely ground insoluble colouring matters. Many are highly toxic substances, such as: Aluminum Antimony * Arsenic * Barium * Cadmium Chromates * Cobalt * Lead Manganese Mercury Oxides Sulfides Zinc * most dangerous	<div>  H  H  M </div>	Most severe hazards from: Inhalation Ingestion Cuts and wounds Health is affected from minor ailments: Spasms Vomiting Headaches Weakness To very severe and fatal condition: Allergies-skin, respiratory Asthma Blood disease- anemia Bone damage Cancer- lung, skin Fibrosis Gastrointestinal problems Kidney damage Liver damage Nervous system diseases Poisoning- acute to fatal Loss of smell






PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	AVOID inhalation and ingestion See general PAINT safety precautions	Use water-base paints
	AVOID inhalation and ingestion See general PAINT safety precautions	Use water-base paints
  	AVOID inhalation of powders and spray paint AVOID grinding of pigment AVOID spraying whenever possible Use proper venting Use proper respirator Mix powders near slot vent, inside dust box, or in bucket covered with moist cloth To avoid dust, teach children safe mixing and working procedures Practice careful personal hygiene to avoid ingestion	Use premixed liquid paint











PAINTING

MATERIAL	SYMBOL	HAZARD
<p><u>PAINTS</u></p> <p><u>POWDER PAINTS</u></p>	<p> H</p> <p> H</p>	<p>Pigment poisoning</p>
<p><u>SPRAY PAINTS</u></p> <p><u>AEROSOL SPRAYS</u></p> <p>Used with</p> <p>spray guns</p> <p>spray cans</p> <p>air brushes</p> <p>contain:</p> <p>organic solvents</p> <p>butane</p> <p>carbon dioxide</p> <p>fine particles</p>	<p></p> <p></p>	<p><u>GENERAL</u></p> <p>Respiratory dangers caused by fine spray which contains fine particles of resins, paint, or laquer and can remain suspended in the air for hours</p> <p>Olfactory fatigue sets in and you no longer smell the spray</p> <p>Chronic poisoning from toxic pigments</p> <p>High pressure guns can cause pigment injection under the skin which may require amputation</p> <p>Aerosol cans are highly explosive</p>
<p><u>TEMPRA BLOCKS</u></p>	<p></p>	<p>Dust from blocks and paintings may be toxic</p> <p>AVOID ingestion</p>
<p><u>PASTELS/ CHALKS</u></p> <p>See DRAWING section</p> <p>May contain:</p> <p>asbestos</p>	<p> M</p>	<p>AVOID creation and breathing of dust</p>













PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	AVOID inhalation Use safe mixing practices	
 	<u>GENERAL</u> AVOID use with elementary students AVOID paint with highly toxic pigments such as lead or zinc chromate, known carcinogens AVOID using mouth atomizers Use fume hood, approved mist respirator, or paint spray respirator Wear gloves Do not use near open flame	Stipple the paint with brush or sponge Use tooth brush or stencil brush for splatter effect
	AVOID inhalation of pigment dust AVOID ingestion Wash hands after use Protect open wounds	
	Wet mop cleanup	Use wax crayons, conte sticks, oil pastels









PAINTING

MATERIAL	SYMBOL	HAZARD
<p><u>PRESERVATIVES</u></p> <p>Used in paint to give a longer shelf life</p>	  H  H	<p>Some are highly toxic by inhalation and ingestion</p> <p>May cause acute but not chronic illness</p>
<p><u>SEALERS</u></p> <p>Lacquers Varnishes</p> <p>contain Esters isomyl acetate butyl acetate ethyl acetate</p>	 H  M 	<p>Eye irritant</p> <p>Respiratory irritant</p> <p>Skin irritant</p> <p>May form highly toxic phosgene when exposed to flames and ultraviolet light</p>
<p><u>SOLVENTS</u></p> <p>Have many uses:</p> <p>to dissolve and mix oils, resins, and varnishes</p> <p>to remove lacquers, paints, and varnishes</p> <p>to clean tools, surfaces, and hands</p>	  H  H  M	<p><u>GENERAL</u></p> <p>One of the most underrated art hazards</p> <p>Almost all are poisonous and some are lethal in small doses, inhaled or ingested</p> <p>Narcosis or central nervous system depression. Symptoms: dizziness, headaches, loss of coordination, mental confusion, coma and death</p>





PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
  	<p>Wear vapor respirator</p> <p>Use in liquid form rather than powder form</p> <p>avoid ingestion</p> <p>Wear gloves</p>	<p>Use safer products such as: oil of cloves, sodium benzoate, propyl paraben</p> <p>Use redimix paint</p>
  	<p>AVOID use with elementary students</p> <p>AVOID inhalation</p> <p>Use under hood vent or outdoors</p> <p>Wear proper gloves</p>	<p>Use acrylic or polymer medium to seal surfaces where applicable</p>
     	<p><u>GENERAL</u></p> <p>AVOID with elementary students</p> <p>AVOID inhalation , ingestion, and skin contact</p> <p>Use proper ventilation</p> <p>Cover all containers to prevent evaporation</p> <p>AVOID lethal kind: benzene -benzol carbon tetrachloride</p>	<p>Use water-base paints, inks, felts, and glues rather than solvent-based materials</p> <p>Use butter , margarine, or vaseline to clean skin</p> <p>Use the least toxic solvents such as: ACETONE ETHANOL -denatured alcohol or grain alcohol ISOPROPYL ALCOHOL MINERAL SPIRITS- especially odorless paint thinners with aromatic hydrocarbons removed</p>













PAINTING

MATERIAL	SYMBOL	HAZARD
<u>SOLVENTS</u> <u>ALCOHOL</u> Methanol wood alcohol methyl alcohol rubbing alcohol	 H  H	Affects the nervous system causing dizziness, nausea, intoxication, blurred vision Possible liver and kidney damage Blindness and death
Amyl alcohol fusel oil	 H  H	Effects the nervous system May cause dizziness, nausea, vomiting, or double vision
Butyl alcohol	 M	Eye, nose, and throat irritation
Isopropyl alcohol	 M	Moderate to low toxicity
Ethyl alcohol grain alcohol	 M	Liver damage
Benzyl alcohol	 L	Low toxicity








PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
<div><div></div><div></div><div></div><div></div></div>	<div>AVOID inhalation</div> <div>AVOID ingestion</div> <div>AVOID skin contact</div> <div>Use proper ventilation</div>	<div>Use ETHANOL – a denatured alcohol containing smaller amounts of methanol</div>


















PAINTING

MATERIAL	SYMBOL	HAZARD
<u>SOLVENTS</u> <u>AROMATIC</u> <u>HYDROCARBONS</u> Are among the most dangerous solvents Used in: paints varnish removers lacquers inks plastic solvents	 H  H  H  H  H	<u>GENERAL</u> Strong narcotic properties Pulmonary edema Skin irritant Highly flammable Chronic poisoning from cumulative small amounts
Benzene	 H  H  H	Destroys bone marrow causing aplastic anemia Carcinogen Highly flammable—flash point 12 degrees F. minus 11 degrees C.
Toluene toluol aromatic naphtha	 H  H  H 	Chronic liver and kidney damage Heart sensitization and death Adverse effect on reproductive organs May cause skin defatting Flammable— flash point 45 degrees F. 7 degrees C.
Xylene/ Xylol Used in: lacquer thinner Washup		See toluene






PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
<div> <div>   </div> <div>   </div> </div>	<p><u>GENERAL</u></p> <p>With elementary students use outdoors or avoid use</p> <p>Use with fume hood</p> <p>Use an organic respirator</p> <p>Keep all containers closed</p> <p>Wear gloves</p> <p>AVOID skin contact</p>	
<div>  </div>	<p>AVOID use</p>	<p>Use water-based paints</p> <p>Use the less dangerous solvents ACETONE or ETHANOL-grain alcohol</p>
<div>  </div>	<p>Avoid use</p> <p>Keep at temperatures below 45 degrees F. 7 degrees C.</p>	<p>Use water base paints</p> <p>Use the less dangerous solvents ACETONE or ETHANOL-grain alcohol</p>
<div>  </div>	<p>AVOID use</p>	<p>ACETONE- only slightly toxic but highly flammable</p>

















PAINTING

MATERIAL	SYMBOL	HAZARD
<u>AROMATIC</u> <u>HYDROCARBONS</u> Styrene Uses: resin solvent paint remover varnish remover silkscreen washup lacquer thinner aerosol sprays	   	Possibly more toxic than toluene and xylene Respiratory irritation Narcosis Damage to liver , kidney , and nervous system
<u>CHLORINATED</u> <u>HYDROCARBONS</u>		<u>GENERAL</u> Liver and kidney damage Dangerous in combination with alcohol Dissolves the fatty layer of skin-dermatitis
Carbon tetrachloride	    	Forms the highly toxic gas phosgene in presence of heat and ultraviolet light Suspected carcinogen Severe liver and kidney damage Fatal in large exposure, especially in combination with alcohol
Chloroform phosgene gas	   	Carcinogen- liver cancer Forms highly toxic phosgene gas
Methyl styrene	  	Possible liver , nervous system and blood damage Narcosis





PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	AVOID use	ACETONE (highly flammable) ETHANOL
	<u>GENERAL</u> AVOID inhalation AVOID ingestion AVOID skin contact Keep all containers closed to avoid evaporation	<u>GENERAL</u> Use the least toxic solvents: ACETONE ETHANOL – grain alcohol ISOPROPYL ALCOHOL MINERAL SPIRITS– especially the odorless paint thinners that have the aromatic hydrocarbons removed
	AVOID USE	
	AVOID USE	
	AVOID Use	










PAINTING

MATERIAL	SYMBOL	HAZARD
<div><div><div>CHLORINATED HYDROCARBONS</div><div>Methylene chloride</div></div></div>	<div><div></div><div> H</div><div> H</div><div></div><div></div></div>	<div>Severe respiratory irritant</div> <div>Narcosis</div> <div>Forms carbon monoxide in the body and has caused fatal heart attacks</div> <div>Highly volatile</div>
<div><div><div>Tetrachloroethylene</div><div>Tetrachloroethane</div><div>phosgene gas</div></div></div>	<div><div>  H</div><div> H</div><div></div></div>	<div>Severe damage to blood, liver and nervous system , as well as gastrointestinal system</div> <div>Produces highly toxic phosgene gas in the presence of flames or ultraviolet light</div>
<div><div><div>Perchloroethylene</div><div>phosgene gas</div></div></div>	<div><div>  H</div><div></div></div>	<div>Narcosis, liver damage, carcinogen</div> <div>Produces highly toxic phosgene gas in the presence of flames or ultraviolet light</div>
<div><div><div>Ethylene dichloride</div><div>phosgene gas</div></div></div>	<div><div>  H</div><div> M</div><div></div></div>	<div>Liver cancer</div> <div>Produces highly toxic phosgene gas in the presence of flames or ultraviolet light</div> <div>Fatal when inhaled in high concentration</div>





PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	AVOID USE- especially smokers, people with heart problems, and the elderly	Use the least toxic solvents: ACETONE ETHANOL- grain alcohol ISOPROPYL ALCOHOL MINERAL SPIRITS- especially the odorless paint thinners that have the aromatic hydrocarbons removed
	AVOID USE in presence of flame or ultraviolet light	
	AVOID USE in presence or flame or ultraviolet light	
	AVOID USE	












PAINTING

MATERIAL	SYMBOL	HAZARD
<u>SOLVENTS</u> <u>PETROLEUM</u> <u>DISTILLATES</u> Uses: paint thinners rubber cement silkscreen cleanup solvents	 H  M 	<u>GENERAL</u> Ingestion may cause pulmonary edema, chemical pneumonia and possible death Skin irritant Highly flammable
N-hexane	  H	Extremely volatile Nerve damage and possible paralysis of arms and legs Permanent damage to central nervous system with high exposure
Gasoline		Flammable- flash point minus 50 degrees F. minus 46 degrees C.
Benzine		Flammable- flash point 20 to 55 degrees F. minus 7 to 13 degrees C.
Mineral spirits odorless paint thinner turpentine substitutes white spirits		Flammable- flash point 86 to 105 degrees F. 30 to 40 degrees C.
Kerosene		Flammable- flash point 100 to 165 degrees F. 38 to 74 degrees C.










PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	<u>GENERAL</u> Do not store rags used for petroleum distillates	Use water-based paints, glues, and pens
	AVOID inhalation AVOID ingestion AVOID skin contact	
	Use proper ventilation	
	Seal containers to avoid evaporation	











PAINTING

MATERIAL	SYMBOL	HAZARD
<u>SOLVENTS</u> <u>ESTERS</u> Uses: Lacquers Resins Plastic solvents which may contain ethyl acetate methyl acetate amyl acetate	  M  H  L	Eye irritant Respiratory irritant Anesthetic effects
<u>GLYCOLS AND DERIVATIVES</u> Uses: Paint Aerosol sprays Lacquer thinners which may contain: methyl cellosolve butyl cellosolve cellosolve	 H  H  H	Anemia and kidney damage Birth defects, miscarriages and sterility, even at low exposure levels
<u>KETONES</u> Uses: Lacquers Oil Plastics Waxes Inks isophorone methyl butyl ketone	  H  H  H	Eye irritant Respiratory irritant- large amounts can cause narcosis Ingestion causes vomiting, nausea, and abdominal pain, pulmonary edema and kidney damage


PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
  	<p>Wear goggles</p> <p>Use proper ventilation</p> <p>AVOID inhalation, digestion and eye contact</p>	<p>Use water-based materials</p>
 	<p>Use proper ventilation</p> <p>AVOID ingestion , inhalation, and skin contact</p>	<p>Use water-based materials</p>
   	<p>AVOID inhalation, ingestion, and skin contact</p> <p>Use proper ventilation</p> <p>Close containers well to avoid evaporation</p> <p>Discard rags in proper container</p> <p>Highly flammable</p>	<p>ACETONE- flash point 15 degrees F. minus 10 degrees C. - extremely flammable</p>

PAINTING

MATERIAL	SYMBOL	HAZARD
<div><div><div><div><div>SOLVENTS</div><div>ACETONE</div></div></div><div><div>Methyl ethyl ketone</div><div>M.E.K.</div></div></div></div>	<div><div> M</div><div> M</div><div> L</div></div>	<div><div>A safer solvent except for high flammability</div><div>No lasting physical effects</div><div>More toxic than acetone</div><div>May cause peripheral neuropathy</div></div>
<div><div>Cyclohexanone</div></div>	<div><div> H</div><div> H</div><div> M</div></div>	<div><div>Damage to nervous system</div></div>
<div><div>Turpentine</div></div>	<div><div> M</div><div> H</div><div> M</div><div></div></div>	<div><div>Respiratory irritant</div><div>Headaches</div><div>Skin irritant and sensitizer</div><div>Gastritis, anxiety, mental confusion</div><div>Highly poisonous- 1 tablespoon ingested may be fatal to a child</div></div>

PAINTING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	AVOID USE with elementary children	ACETONE

PIGMENTS

PIGMENTS are finely ground substances that give colour to the various colouring media such as paints-oil, acrylic, tempera, epoxy, fresco, pastels-crayons, pencils, chalks, inks and dyes.

HEALTH HAZARDS arise mainly from inhalation of fine pigment dust and paint sprays and from ingestion of pigments when pointing a brush with the lips or neglecting careful hygiene and housekeeping precautions.

SAFETY PRACTICES:

Avoid pigment grindings and mixing as well as paint spraying if, at all possible. Use hood vents, mixing boxes, appropriate respirators, goggles and gloves to avoid the inhalation and ingestion of these highly toxic substances.

Eat, drink and smoke with clean hands only, and avoid contamination of open wounds and abrasions.

PLEASE NOTE:

In the following charts, colours are named both by popular name and by colour code. The latter identifies colours according to chemical composition.

Pigments are among the most highly toxic substances for our bodies. The list below bears this out. Note, the stars mark the most dangerous among them. These must be respected for their severe and, at times, fatal effects on the human body, including conditions such as: anemia, bone damage, lung and skin cancer, fibrosis, gastrointestinal problems, kidney and liver damage, nervous system diseases, loss of smell and acute to fatal poisoning.

- Aluminum
- Antimony
- * Arsenic
- * Barium
- * Cadmium
- Chromates
- * Cobalt .
- * Lead
- Manganese
- Mercury
- Oxides
- Sulfides
- Zinc

COLORS WITH NO SIGNIFICANT HAZARDS

COLOUR	POPULAR NAME	COLOUR CODE
YELLOW	YELLOW OCHRE MARS YELLOW	Yellow 42/43 Yellow 42
RED	VENETIAN RED MARS RED TERRA ROSA ROSE MADDER ALIZARIN CRIMSON	Red 101 Red 101 Red 101 Red 83 Red 83
BLUE	ULTRAMARINE BLUE	Blue 29
GREEN	ULTRAMARINE GREEN	
VIOLET	ULTRAMARINE VIOLET	Violet 15
BROWN	RAW SIENNA BURNT SIENNA	Brown 6 Brown 6
WHITE	TITANIUM WHITE BARIUM WHITE	White 6 White 21/22
BLACK	MARS BLACK IVORY BLACK	Black 11 Black 9

<p>TABLE OF HAZARDOUS PAINT PIGMENTS</p>
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PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
<p><u>ANTIMONY</u></p>	<p>  H  H  H </p>	<p>Antimony White/White 11</p>	<p>Acute indigestion or inhalation: metallic taste, vomiting, diarrhea, severe mouth and nose irritation, pulmonary congestion</p> <p>Chronic exposure: loss of appetite and weight, insomnia, nausea, headache, even liver and kidney damage</p> <p>Skin contact: severe lesions and ulcers</p>
<p> <u>ARSENIC</u> Copper Arsenite </p>	<p>  H  H  H </p>	<p>Scheele's Green/Green 22</p>	<p>Chronic inhalation: lung cancer</p> <p>Chronic ingestion: damage to kidney, liver, blood and peripheral nervous system</p> <p>Acute indigestion: fatal arsenic poisoning</p> <p>Carcinogen - skin cancer</p>
<p><u>BARIUM</u></p>	<p>  H  H </p>		<p>Acute inhalation and ingestion: BARIUM POISONING - severe muscle pain, intestinal spasms, heart irregularities</p> <p>Respiratory allergies</p> <p>Lung cancer</p>

TABLE OF HAZARDOUS PAINT PIGMENTS

PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Barium Chromate	☞ H	Barium Yellow/-	See above
Barium Sulfate		Barium White/White 21 or 22	No specific hazard
Barium Manganate Barium Sulfate	☞ H ☞ H	Manganese Blue/Blue 33	Acute inhalation: BARIUM POISONING Chronic ingestion: MANGANESE POISONING, a serious nervous system disorder similar to Parkinson's disease Early symptoms: Loss of appetite, weakness, spasms, headaches and irritability
Barium Chromate	☞ H ☞ H	Barium Yellow	Respiratory allergies Carcinogen: lung cancer BARIUM POISONING
Soluble Barium	☞ H ☞ H	Lithol Red / Red 49	BARIUM POISONING
<u>CADMIUM</u> Cadmium Sulfide and Selenide	☞ H ☞ H ☞ H ☞ H	Cadmium Orange/ Orange 20 Cadmium Red/Red 108 Cadmium Yellow/ Yellow 35 & 37	In all three colours,the CADMIUM content causes, with chronic intake: kidney damage, loss of smell, gastro-intestinal problems, bone, teeth and liver damage as well as prostate and lung cancer

TABLE OF HAZARDOUS PAINT PRODUCTS	
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PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Cadmium Sulfide and Mercuric Sulfide	 H  H	Cadmium Vermillion Red/ Red 113	In addition to the above: MERCURY POISONING which severely damages the nervous system and kidneys Skin allergies
<u>CARBON</u>	 M	Carbon Black/Black 6 Lamp Black/Black 6	Chronic inhalation may result in respiratory irritation Repeated skin contact may cause skin cancer
<u>CHROMATES</u> Barium Chromate Zinc Chromate Strontium Chromate	 H  H  M	Barium Yellow/ Zinc Yellow/Yellow 36 Strontium Yellow/ Yellow 22	Carcinogen Teratogen- causes fetal monstrosities Suspected mutagen- causes genetic changes Lung cancer , respiratory allergies and perforation of nasal septum CHROMIUM POISONING: kidney damage, muscle cramps, vertigo, gastroenteritis See above See above Lung cancer , CHROMIUM poisoning, Skin allergies and ulcers

<p>TABLE OF HAZARDOUS PAINT PIGMENTS</p>




PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Lead Chromate		Chrome Green/Green 15 Milor Green/Green 15	Also LEAD POISONING
Lead Chromate		Chrome Yellow/Yellow 34 Chrome Orange	CHROMIUM POISONING
Barium Chromate		Lemon Yellow/	Also: BARIUM POISONING, heart irregularities, intestinal spasms, sever muscle pain
<u>COBALT</u>			<p>Repeated skin contact: allergies, especially at neck, ankles and elbows</p> <p>Chronic inhalation: asthma and possible fibrosis</p> <p>Ingestion: Acute illness with vomiting, diarrhea and hotness</p> <p>See above</p> <p>See above</p> <p>See above</p> <p>Skin allergies</p> <p>As above and in addition: skin ulceration, acute fatal poisoning, chronic ingestion or inhalation</p> <p>May cause digestive disturbances and general damage to liver, kidney, blood and peripheral nervous system</p>
Cobalt		Cerulean Blue/Blue 35	
Cobalt Oxide		Cobalt Blue/Blue 28	
Cobalt Oxide		Cobalt Green/Green 19	
Cobalt Phosphate		Cobalt Violet/Violet 14	
Cobalt Arsenate		Cobalt Violet/ Violet 77350	

TABLE OF HAZARDOUS PAINT PIGMENTS










PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Potassium Cobalt Initrite	 M  M  L	Cobalt Yellow/Yellow 40	Ingestion: Acute poisoning. Chronic effect: Drop in blood pressure, headaches, rapid pulse, visual disturbances
<u>COPPER</u> Copper Acetoarsenite	 H  H  M	Emerald Green/Green 21	Human carcinogen: Skin and lung cancer Chronic exposure may cause damage to liver, kidney, blood, peripheral nervous system and digestive system Acute ingestion: Fatal ARSENIC POISONING
<u>CYANIDE</u> Phthalocyanide Phthalocyanide Ferric Ferrocyanoide	 H  H  H	Thalo Blue/Blue 15 Thalo Green/Green 7 Prussian Blue/Blue 27 Paris Blue/Blue 27 Berlin Blue/Blue 27	Usually contaminated by PCB's which are a suspected carcinogen and teratogen- causes birth defects Same as Thalo Blue Harmless by itself but can form extremely toxic hydrogen cyanide gas when heated or when exposed to ultraviolet radiation

TABLE OF HAZARDOUS PAINT PIGMENTS






















PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
<p><u>SULFIDES</u></p> <p>Barium Sulfate Zinc Sulfide Zinc Oxide</p>	 H	Lithopone/White 5	<p>Zinc sulfide might react with stomach acids to produce the highly toxic gas hydrogen sulfide</p>
<p><u>LEAD</u></p> <p>Lead Chromate</p> <p>Lead Carbonate Zinc Oxide</p>	 H  H  H  H  H  H	<p>Chrome Green/Green 15</p> <p>Mixed White/White 1 Flake White/White 1 White Lead/White 1</p>	<p>LEAD POISONING: Affects the gastrointestinal system (lead colic), red blood cells (anemia) and the neuromuscular system affecting wrists, fingers, ankles and toes</p> <p>Other common effects include weakness, irritability, pain in joints and muscles, liver and kidney damage and possible birth defects</p> <p>Lung cancer</p> <p>Perforation of nasal septum</p> <p>Allergies</p> <p>CHROMIUM POISONING</p> <p>LEAD AND CHROMIUM POISONING</p> <p>Both acute and chronic intake can cause LEAD POISONING</p>


TABLE OF HAZARDOUS PAINT PRODUCTS

PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Lead Chromate Lead Molybdate Lead Sulfate	 H  H  M	Molybdate Orange/ Red 104	Carcinogen Teratogen Suspected mutagen LEAD & CHROMIUM POISONING
Lead Antimoniate	 H  H  M	Naples Yellow/Yellow/4	Inhalation and ingestion: ANTIMONY POISONING- colic, vomiting, diarrhea, severe irritation of the mouth and nose, shallow breathing and pulmonary congestion Chronic exposure: liver and kidney damage and LEAD POISONING
<u>MANGANESE</u>	 H  H		MANGANESE POISONING is a serious nervous system disorder, very similar to Parkinson's disease. Early symptoms include: loss of appetite, apathy, spasms, headaches and irritability
Barium Manganate	 H  H	Manganese Blue/Blue 33	MANGANESE POISONING Also BARIUM POISONING
		Manganese Violet/ Violet 16	Chronic exposure: MANGANESE POISONING
Manganese Silicates	 H  H	Raw Umber/Brown 7	Chronic exposure: MANGANESE POISONING

<p>TABLE OF HAZARDOUS PAINT PRODUCTS</p>

PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
<p><u>MERCURY</u></p> <p>Mercuric Sulfide</p>		<p>Vermillion/Red 106</p>	<p>Inhalation or ingestion can result in MERCURY Poisoning which damages the kidneys and the nervous system</p> <p>Mercury POISONING</p> <p>Skin allergies</p>
<p><u>OXIDES</u></p> <p>Iron Oxides</p> <p>Iron Oxides</p> <p>Iron Oxides</p> <p>Manganese Dioxide</p> <p>Cobalt and Tin Oxides</p> <p>Chromic Oxides</p>		<p>Mars Black/Black 11</p> <p>Burnt Sienna/Brown 6</p> <p>Mars Red/Red 101</p> <p>English Red/Red 101</p> <p>Light Red/Red 101</p> <p>Burnt Umber/Brown 7</p> <p>Mars Brown/Brown 7</p> <p>Cerulean Blue/Blue 35</p> <p>Chromium Oxide Green/ Green 17</p>	<p>No specific hazards.</p> <p>No significant hazards.</p> <p>No significant hazards</p> <p>Chronic inhalation - serious nervous disorder resembling Parkinson's disease</p> <p>Chronic inhalation may lead to asthma and fibrosis</p> <p>Ingestion may cause acute illness with vomiting, diarrhea and sensation of hotness</p> <p>Skin and respiratory irritation and allergies</p> <p>Possible carcinogen</p>

<p>TABLE OF HAZARDOUS PAINT PIGMENTS</p>

PIGMENT	TOXICITY RATING	COLOUR/ PIGMENT CODE	HAZARDS
Iron Oxide		Mars Yellow/Yellow 42	No significant hazards
Titanium Dioxide		Titanium White/White 6	No significant hazards
<u>ZINC</u> Zinc Oxide	L	Zinc White/White 4 Chinese White/White/4	Inhalation and ingestion: slight irritation
Zinc Chromate	L	Zinc Yellow/Yellow 36	See Chromates
Zinc Sulfide	 H	Lithopone/White 5	Zinc Sulfide might react with digestive acids to form a highly toxic gas – hydrogen sulfide

SOLVENTS

The most effective precaution with solvents is to eliminate all that are not absolutely necessary. High quality water based paints and inks have reduced the necessity for many solvents.

If solvents are necessary, the following precautions should be taken:

1. Rooms must be properly vented.
2. Do not use paint stripper or varnish remover as they are one of the most hazardous of solvents.
3. Use lacquer thinners with extreme care.

In general terms, a flammable liquid is a fire hazard under normal conditions and use. It is combustible if it becomes a fire hazard when heated.

The fire hazard of a liquid is expressed in terms of its flash point. A flash point is the lowest temperature at which the liquid expels enough vapors to form an ignitable mixture with the air at the surface of the liquid.

A liquid is flammable if the flash point is below 100°F or 37°C. It is combustible if the flash point is at or above 100°F or 37°C. If a liquid has a flash point of below 20°F, it is considered to be highly flammable.

Class I Flammable Liquids

Acetone, benzene, ethyl alcohol, toluol (contained in some lacquer thinners), turpentine, and gasoline.

These liquids should not be stored or used in the art room as they are highly volatile (evaporate and vaporize rapidly).

Class II Combustible Liquids

Kerosene, mineral spirits, lithotine. These are not as hazardous as Class I materials, but should be stored in special containers and used with care.

SOLVENT - STORAGE AND HANDLING

Storage Containers for flammable and combustible liquids should be made of heavy metal with a self-closing lid. Never use breakable containers.

Storage Cabinets for flammable and combustible liquids should meet the National Fire Protection Association fire code (NFPA). They should be double-walled, built of 18 gauge metal and have tightly closing lockable doors. Have storage cabinets clearly labeled "Flammable - Keep Fire Away" and approved by the local fire marshal. Never leave open containers in storage cabinet.

Approved Waste Containers should be used for the disposal of rags and paper towels that have been used with flammable or combustible liquids. These containers should be constructed of sheet metal and have covers that close automatically. They should be emptied everyday and handled separately from regular waste according to school district or local policies.

BASIC RULES

1. Label containers clearly as to their contents and hazards.
2. Store in non-breakable containers (metal or plastic).
3. Store large containers on lower shelves to prevent danger of falling and breaking.
4. Store chemicals that may react together in separate areas.
5. Keep all containers closed even when working to prevent vapours and dusts from escaping into air.
6. Do not eat, drink, or smoke in studio.
7. Wear special clothes in studio. Keep separate and wash frequently.
8. Follow first aid procedures for accidental contact. Wash with lots of water. For eye contact, rinse for 15 minutes. Call doctor.
9. Wash hands frequently with soap and water after work, before eating and during work breaks. Never use solvents to clean hands. If necessary, use waterless hand cleaner, then soap and water.
10. Wear gloves or barrier cream to protect hands from solvents.
11. Wipe spills up immediately with paper towel and place in approved disposal unit.
12. Use a hand pump to dispense liquid that is stored in large containers (five-gallon drum).
13. Wear safety goggles when pouring liquids that can splash and cause eye damage.