1250 REACTIVATOR REVISION DATE: 06-16-2011

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VER 1.2

1. INDENTIFCATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

VRS Marking, Inc.

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Arroyo Grande, CA 93420 USA

General Product Information: 805-481-9787

Product Name: Reactivator, 1250 Reactivator

Emergency Phone (For Transport purposes) 805-550-6119

2. Hazards Identification

GHS Pictograms

Emergency Overview

Appearance: Liquid

WARNING! FLAMMABLE LIQUID AND VAPOR. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. MAY CAUSE SKIN AND RESPITORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY FRY SKIN AND CAUSE DERMATITUS AND BURNS.

Potential Health Effects

Exposure Routes

Inhalation, Skin Absorption, Skin Contact, Eye Contact, Ingestion

Eye Contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin Contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of the skin, skin burns, and other skin damage.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.)

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, Upper respiratory tract, lung (for example, Asthma like conditions), liver, kidney, central nervous system, auditory system,. Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias. Individuals with preexisting heart disorders may be more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing and/or passage of the material through the skin may include: Metallic taste, stomach and intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), runny nose, cough, central nervous system excitation (giddiness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, temporary changes in mood and behavior, lowered blood pressure, mild temporary changes in liver, effects on heart rate, respiratory depression (slowing of the breathing rate), blurred vision, lack of coordination, confusion, irregular heartbeat, lung edema (fluid buildup in the lung tissue), kidney damage, coma.

Target Organs

Exposure to this material (or a component) has been found to cause kidney damage in male rats. The mechanism by which this toxicity occurs is specific to the male rat and the kidney effects are not expected to occur in humans. This material (or a component) shortens the time of onset or worsens the liver and kidney damage induced by other chemicals. This material (or a component) shortens the time of onset or worsens the neurotoxic effects induced by other chemicals. Breathing isopropanol vapors has caused damage to the lining of the middle ear in experimental animals. The relevance of this finding to humans is uncertain. Prolonged intentional toluene abuse may lead to damage to many organ systems having effects on: central and peripheral nervous systems, vision, hearing, liver, kidneys, heart, and blood. Such abuse has been associated with brain damage characterized by disturbances in gait, personality changes and loss of memory. Comparable central nervous system effects have not been shown to result from occupational exposure to toluene. Prolonged intentional toluene abuse may lead to hearing loss progressing to deafness. In addition, while noise is known to cause hearing loss in humans, it has been suggested that workers exposed to organic solvents, including toluene, along with noise may suffer greater hearing loss than would be expected from exposure to noise alone. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible liver effects, anemia, respiratory tract damage (nose, throat, and airways), kidney damage, lung damage, effects on hearing, central nervous system damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: anemia, effects on hearing, kidney damage.

Carcinogenicity

Toluene may be harmful to the human fetus based on positive test results with laboratory animals. Case studies show that prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans. This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings is uncertain.

Reproductive hazard

Toluene may be harmful to the human fetus based on positive test results with laboratory animals. Case studies show that prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans. This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	CAS-No.	Concentration
TOLUENE	108-88-3	>=50-<60%
METHYL ISOBUTYL KEYTONE	108-10-1	>=30-<40%
ISOPROPANOL	67-63-0	>=5-<10%
ISOBUTANOL	78-83-1	>=5-<10%
BUTANOL NORMAL	71-36-3	>=1.5-<5%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek medical attention. If skin is not damaged, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth. Place individual on the left side with head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet. Seek medical attention.

Notes to physician:

Hazards: Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. Administration of high doses of isopropanol in combination with known hepatotoxic chemicals resulted in enhanced liver toxicity in experimental animals. **Treatment:** No information available.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Dry Chemical. Carbon Dioxide (CO2), Water Spray

Hazardous Combustion Products

Carbon dioxide and carbon monoxide, hydrocarbons, formaldehyde, toxic fumes

Precautions for fire-fighting

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even when empty) because product (including residue) can ignite explosively. Wear full firefighter turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquid Classification

Flammable Liquid Class IB

6. Accidental Release Measures

Personal precautions

For personal protection, see section 8. Persons not wearing protective equipment should be excluded from area of spill clean-up has been completed. Ensure adequate ventilation. Eliminate all ignition sources (flares, flames, pilot lights, electrical sparks). Pay attention to the spreading of gasses especially at ground level (heavier than air) and to the direction of the wind.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Other Information

Comply with all applicable federal, state, and local regulations. Suppress (knock down) gasses/vapors/mists with a water jet spray.

7. Handling and Storage

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77. Warning: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignitions without the presence of obvious ignition sources. Published “auto ignition” or “ignition” temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Storage

Store in a cool, dry, well ventilated area, away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

TOLUENE					**108-88-3**
	ACGIH		**time weighted average**		**20 ppm**
	NIOSH		**recommended exposure limit (REL)**		**100 ppm**
	NIOSH		**recommended exposure limit (REL)**		**375 mg/m3**
	NIOSH		**Short term exposure limit**		**150 ppm**
	NIOSH		**Short term exposure limit**		**560 mg/m3**
	OSHA Z2		**time weighted average**		**200 ppm**
	OSHA Z2		**Ceiling Limit Value:**		**300 ppm**
	OSHA Z2		**Maximum Concentration:**		**500 ppm**
Methyl Isobutyl Keytone					**108-10-1**
	ACGIH		**Time Weighted Average**		**20 ppm**
	ACGIH		**Short term Exposure Limit**		**75 ppm**
	NIOSH		**recommended exposure limit (REL)**		**50 ppm**
	NIOSH		**recommended exposure limit (REL)**		**205 mg/m3**
	NIOSH		**Short term Exposure Limit**		**75 ppm**
	NIOSH		**Short term Exposure Limit**		**300 mg/m3**
	OSHA Z1		**Permissible Exposure Limit**		**100 ppm**
	OSHA Z1		**Permissible Exposure Limit**		**410 mg/m3**
Isopropanol					**67-63-0**
	ACGIH		**Time Weighted Average**		**200 ppm**
	ACGIH		**Short term Exposure Limit**		**400 ppm**

	NIOSH		**recommended exposure limit (REL)**		**400 ppm**
	NIOSH		**recommended exposure limit (REL)**		**980 mg/m3**
	NIOSH		**Short term exposure limit**		**500 ppm**
	NIOSH		**Short term exposure limit**		**1225 mg/m3**
	OSHA Z1		**Permissible Exposure Limit**		**400 ppm**
	OSHA Z1		**Permissible Exposure Limit**		**980 mg/m3**
Isobutanol					**78-83-1**
	ACGIH		**Time Weighted Average**		**50 ppm**
	NIOSH		**recommended exposure limit (REL)**		**50 ppm**
	NIOSH		**recommended exposure limit (REL)**		**150 mg/m3**
	OSHA Z1		**Permissible Exposure Limit**		**100 ppm**
	OSHA Z1		**Permissible Exposure Limit**		**300 mg/m3**
Butanol Normal					**71-36-3**
	ACGIH		**Time Weighted Average**		**20 ppm**
	NIOSH		**Ceiling Limit Value and Time Period (if specified)**		**50 ppm**
	NIOSH		**Ceiling Limit Value and Time Period (if specified)**		**150 mg/m3**
	OSHA Z1		**Permissible Exposure Limit**		**100 ppm**
	OSHA Z1		**Permissible Exposure Limit**		**300 mg/m3**

General Advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines, or below levels that cause known, suspected or apparent adverse effects.

Skin and Body Protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use. Wear resistant gloves (consult your safety equipment supplier). Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection

A NIOSH approved air purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Clear

Boiling Point/Boiling Range: 180.5 Degrees F/ 82.5 Degrees C @ 1,013.23 hPa Calculated

Phase Transition Liquid/Gas

Flash Point: 45 Degrees F / 7 Degrees C Tag Closed Cup

Evaporation Rate: 1 Ethyl Ether

Lower Explosion Limit/Upper Explosion Limit: 1.2 % (V) / 12% (V)

Vapor Pressure 16.100 mmHg @ 68.00 degrees F / 20.00 Degrees C

Relative vapor density (>) 1 AIR=1

Density 0.835 g/cm3 @ 68.00 Degrees F / 20.00 Degrees C

6.96 lb./ gal @ 68.00 Degrees F / 20.00 Degrees C

No Data Available for: melting point/range, Sublimation point, pH, Ignition temperature, particle size, bulk density, water solubility, solubility's, partition coefficient: n-octanol/water, log Pow, Auto ignition temperature, viscosity-dynamic or kinematic, solids in solution, decomposition temperature, burning number, dust explosion constant, or minimum ignition energy.

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to Avoid

Exposure to air or moisture over prolonged periods. Avoid heat, open flame, and prolonged storage at elevated temperatures.

Incompatible Products

Acids, Aldehydes, Alkali, metals, aluminum, amines, bases, copper, copper alloys, ethylene oxide, halogenated hydrocarbons, halogens, isocyanates, lead, oxidizng agents, peroxides, strong reducing agents. Do not use with aluminum equipment at temperatures over 1250 degrees F.

Hazardous decomposition products

Carbon dioxide and carbon monoxide, hydrocarbons, formaldehyde, toxic fumes

Hazardous reactions

Product will not undergo hazardous polymerization

Thermal Decomposition

No Data

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXIXITY:

TOLUENE	LD 50 RAT: 2.6 g/kg
METHYL ISOBUTYL KEYTONE	LD 50 RAT: 2,080 mg/kg
ISOPROPANOL	NO DATA AVAILABLE
ISOBUTANOL	LD 50 RABBIT: 3,750 mg/kg
BUTANOL NORMAL	LD 50 RAT: 790 mg/kg

ACUTE INHALATION TOXICITY

TOLUENE	LC 50 Rat: 8000 ppm; 4 h
	LC 50 Rat: 8,000 mg/l; 4 h
	LC 50 Rat: 12,200 mg/l; 2 h
METHYL ISOBUTYL KEYTONE	LD 50 rat: >2000 ppm; 4 h
ISOPROPANOL	LC 50 rat: 16000 ppm; 4 h
ISOBUTANOL	LC 50 rat: 8000 ppm; 4 h
BUTANOL NORMAL	LC 50 rat: 8,000 mg/l; 4 h

ACUTE DERMAL TOXICITY

TOLUENE	LD 50 RABBIT 12,124 MG/KG
METHYL ISOBUTYL KEYTONE	LD 50 RABBIT >3.0 G/KG
ISOPROPANOL	NO DATA AVAILABLE
ISOBUTANOL	LD 50 RABBIT 3,392 MG/KG
BUTANOL NORMAL	LD 50 RABBIT 3,400 MG/KG

12. ECOLOGICAL INFORMATION

BIODEGRADABILITY

TOLUENE	NO DATA AVAILABLE	
METHYL ISOBUTYL KEYTONE	NO DATA AVAILABLE	
ISOPROPANOL	NO DATA AVAILABLE	
ISOBUTANOL	NO DATA AVAILABLE	
BUTANOL NORMAL	98%	

BIOACCUMLATION

TOLUENE	Species: Ide, silver or golden orfe (Leuciscus Idus)
	Exposure Time: 3 D
	Dose: .05 mg/L
	Bioconcentration Factor (BCF): 94
	Method: Not Reported
Methyl Isobutyl Kevtone	**no data available**
Isopropanol	**no data available**
Isobutanol	**no data available**
Butanol Normal	**Species: Oncorhynchus mykiss (rainbow trout)**
	exposure time: 24 h
	Dose: 921 mg/l
	Bioconcentration Factor (BCF): 0.38
	method: Static

Ecotoxicity effects to fish

TOLUENE	96 h Renewal LC 50 Rainbow trout, Donaldson Trout Exposure Time: 3 D(oncorhynchus mykiss) : 5.80 mg/l, 96 h static test LC 50 Fathed Minnow (pimephales promelas): 12.60 mg/L: Method: Not Reported
Methyl Isobutyl Kevtone	**96 H LC 50 fathead minnow (pimephales promelas): 492.00 -593.0 mg/l Method: Flow through, Mortality**
Isopropanol	**96 H LC 50 fathead minnow (pimephales promelas): 5770-7450 mg/l Method: Flow through, Mortality**
Isobutanol	**96 H LC 50 fathead minnow (pimephales promelas):1120-1520 mg/l Method: Flow through, Mortality 96 H LC 50 Fathead minnow(pimephales promelas): 1370-1670 mg/l Method: Flow through, Mortality**
Butanol Normal	**96 h static test lc 50 Bluegill (lepomis macrochirus) 100-500 mg/l Method: static: Morality**

Toxicity to daphnia and other aquatic invertebrates

TOLUENE	48 h static test EC 50 Water Flea (daphnia magna) 6.00 mg/l
Methyl Isobutyl Kevtone	**24 h EC 50 Water flea (daphnia magna): 3682 mg/l Method: Static Intoxication**
Isopropanol	**24 h static test LC 50 Water flea (daphnia magna): 10000 mg/l Method: Static Mortality**
Isobutanol	**48 h LC 50 Water flea (daphnia magna): 894-1200 mg/l Method: Static Mortality**
Butanol Normal	**48 h static test EC 50 Water flea (daphnia magna): 1897-2072 mg/l Method: Static Intioxication**

Toxicity to algae or bacteria:

no data available

Biochemical Oxygen Demand: (BOD)

Butanol Normal: Theoretical oxygen demand: 2.59 mg/g

No other data available

Chemical Oxygen Demand: (COD)

Butanol Normal: 2.45 mg/g method: Chemical Oxygen demand

No other data available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods:

Dispose of in accordance with all applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

	ID or UN Number	Proper Shipping Name	Hazard Class	Subsidiary Hazards	Packing Group	Marine Pollutant/ LTD QTY
US DOT-Road	UN1263	Paint Related Material	3		II	
US DOT Rail	UN1263	Paint Related Material	3		II	
US DOT Inland Waterways	UN1263	Paint Related Material	3		II	
Transport Canada-Road	UN1263	Paint Related Material	3		II	
Transport Canada-Rail	UN1263	Paint Related Material	3		II	
Intl. Maritime DG	UN1263	Paint Related Material	3		II	
IATA cargo	UN1263	Paint Related Material	3		II	
IATA Passenger	UN1263	Paint Related Material	3		II	

Dangerous Goods descriptions (if indicated above) may not reflect quantity, end use, or region specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

CALIFORNIA PROP. 65

Ethyl Benzene, Benzene: WARNING! This product contains a chemical known in the state of California to cause cancer**.**

Toluene, Benzene: WARNING! This product contains a chemical known in the state of California to cause birth defects or other reproductive harm.

SARA HAZARD CLASSIFICATION

Fire Hazard

Acute Health Hazard

Chronic Health Hazard

SARA 313 COMPONETS:

TOULENE 53%

METHYL ISOBUTYL KEYTONE 30 %

BUTANOL NORMAL 4%

NEW JERSEY RTK LABEL INFORMATION

TOLUENE	108-88-3
METHYL ISOBUTYL KEYTONE	108-10-1
ISOPROPANOL	67-63-0
ISOBUTANOL	78-83-1
BUTANOL NORMAL	71-36-3

PENNSYLVANIA RTK LABEL INFORMATION

TOLUENE	108-88-3
METHYL ISOBUTYL KEYTONE	108-10-1
ISOPROPANOL	67-63-0
ISOBUTANOL	78-83-1
BUTANOL NORMAL	71-36-3
BENZENE	71-43-2

16. Other Information

The information accumulated herein is believed to be accurate and represents the best data currently available. It is the users responsibility to determine suitability of use. No warranty, expressed or implied, is made, and VRS Marking, Inc. assumes no legal responsibility or liability resulting from its use. Materials comprising <1% by weight, or <0.1% by weight if the chemical is a carcinogen, are not listed herein.