M100 – Workscope Instructions

Filter Tank Repair Workscope

1. Filters (0-DMN-FL-002A) and (0-DMN-FL-002B) Workscope

1.1. Filters (0-DMN-FL-002A) and (0-DMN-FL-002B) were furnished as stainless steel vessel walls and internal components and do not require replacement.

2. Filters (0-DMN-FL-002A) and (0-DMN-FL-002B) Workscope

2.1. Filters (0-DMN-FL-001A) and (0-DMN-FL-001B) were furnished as carbon steel vessel walls and internal and repair work or replacement is required per this specification. The filters accept a strainer size designated as15 micron filter bags. This Workscope Document includes Figure 1 – Rosedale Model 30 Filter (typical drawing) for reference by Contractors.

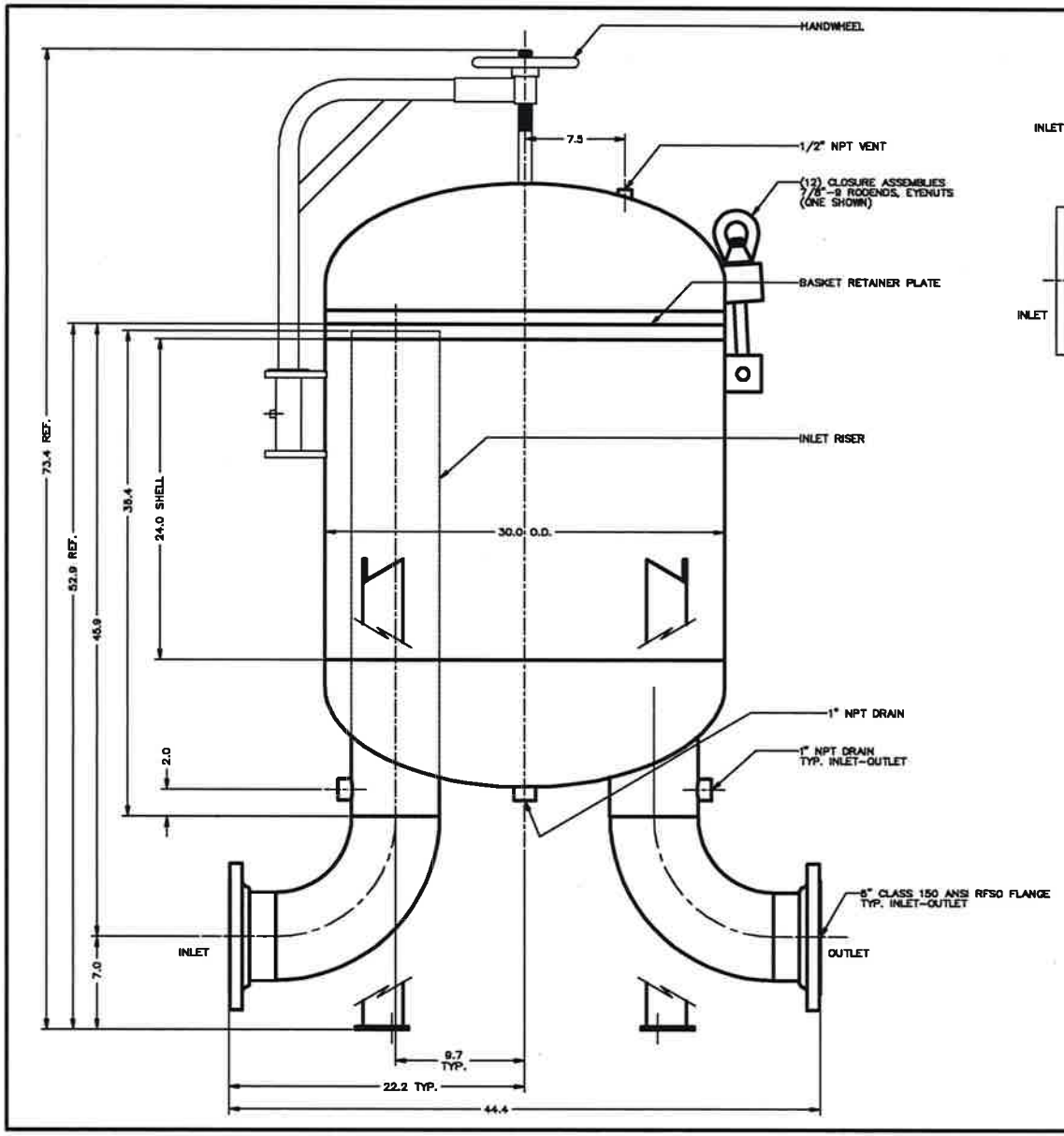
2.2. Filters (0-DMN-FL-001A) and (0-DMN-FL-001B) are to be removed, cleaned of rust. All carbon steel wetted parts of the vessel shall be epoxy coated per this Workscope Document. The Contractor shall include the costs of vessel removal from existing skid, transportation to off-site location for application of specified surface preparation, epoxy coating, and curing, return transportation and re-installation including new gaskets and bolting as required. Contractor may propose on-site application of specified surface preparation, epoxy coating, and curing as an option subject to sole approval, or rejection, by Southern California Public Power Authority.

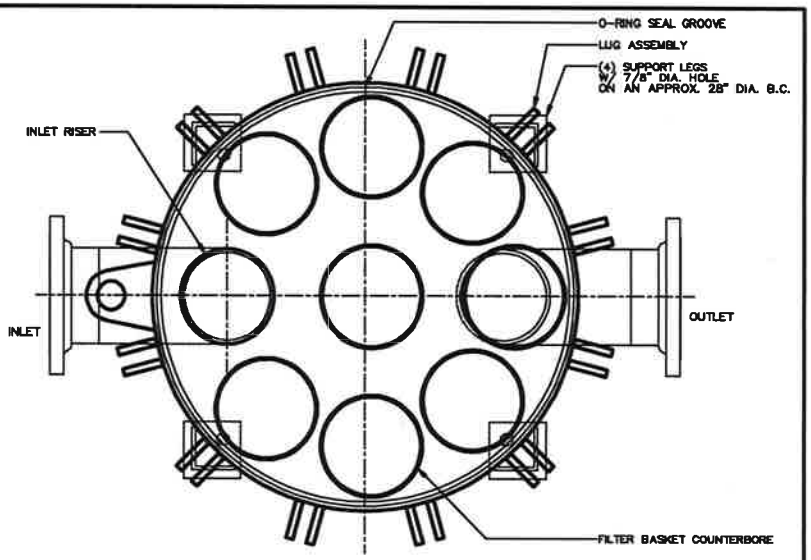
2.3. The Contractor shall furnish new, Two (2) new 15 micron bag filter assemblies (part number Rosedale PO-15-PZS-SS) for installation in Filters (0-DMN-FL-001A) and (0-DMN-FL-001B). New 15 micron individual filter elements shall be provided, Rosedale reference # PO-15-PZS-SS which are Polypropylene with 304 grade Stainless Steel reinforcing bands, 8 per filter tank. The baskets (304 Stainless Steel) will be re-used.

2.4. All carbon steel wetted parts of the vessel shall be have their surface prepared and epoxy coated per Data Sheet – Plasite 7519 which is furnished by Carboline Company and is attached to this Workscope Document. The Contractor shall apply Plasite 7519 (abrasion resistance = 35 milligrams) per the attached data sheet. The Contractor shall contact Carboline for further guidelines, recommendations and any applicable safety precautions associated with this product.

2.5. The Contractor shall apply two (2) multi pass spray coats of 10 – 12 mil/250-350 micron dry film thickness (DFT) as recommended by Carboline for immersion service. The surface shall be blasted per NACE No. 1 White Metal Blast Cleaning. Surface preparation and coating shall be witnessed by a NACE certified Coatings Inspector. Inspection reports confirming the anchor profile, surface preparation and dry film thickness shall be provided. Contractor shall take note that Curing Time for immersion service is 7 days after application. Contractor may utilize Carboline's recommendation for "forced curing" per their recommendations to reduce curing times.

2.6. Holiday Testing of the cured coating shall be conducted per NACE Standard RP0188 or ASTM D-5162 (steel) using a high voltage tester. Test the entire surface of the vessel(s) epoxy coating. Testing shall be conducted at 100 volts per dry mil of lining thickness. Consult the coating manufacturer to confirm that this will not damage the coating. Mark all holidays and repair per manufacturer ‘s recommendations.





TOP VIEW
SHOWN W/O COVER, CLOSURE BOLTING & DAVIT ARM ASSEMBLY

NOTES:

1. CONSTRUCTION
   ALL WELDED CONSTRUCTION,
   ASME CODE STAMP AVAILABLE
2. MATERIALS OF CONSTRUCTION
   ALL WETTED PARTS TO BE CARBON STEEL OR 300 SERIES STAINLESS STEEL
   ALL WELDED ATTACHMENTS TO BE CARBON STEEL OR 300 SERIES STAINLESS STEEL
   CLOSURE ASSEMBLIES TO BE SWING BOLT TYPE
3. DESIGN PRESSURE
   150 PSIG
4. DESIGN TEMPERATURE
   400F
5. FILTER BAG BASKET
   304 STAINLESS STEEL
   4.4 ft2 AREA EACH BASKET
   35.2 ft2 AREA TOTAL EACH HOUSING
   9/64" DIA. HOLES ON 3/16" ST. CL.'S (51% OPEN)
6. FILTER BAG
   (ORDER SEPARATELY)
7. O-RING MATERIAL
   PER ORDER
8. MODEL NUMBER
   30308F1150****-*

Typical Model 30 Drawing

MATERIAL: SEE NOTES		TITLE: MODEL 30 30308F1150****-* ROSEDALE PRODUCTS	
SCALE: 1/4		ROSEDALE PRODUCTS, INC. P.O. BOX 1280 ANN ARBOR, MI 48106	DRAWING NO. D10596.10

product data

carboline®

PLASITE® 7159

Includes PLASITE 7159 HAR

TYPE
A water-resistant epoxy coating polymerized with a polyamine type curing agent. Also available in a high abrasion resistant version.

INTENDED USE
A high performance lining for elevated temperature and pressure immersion services in high purity water, as well as the oil/water separating processes encountered in the petroleum industry.

TEMPERATURE RESISTANCE
Dry film basis is 350°F/177°C for short periods. Continuous immersion temperature and pressure limitations have been established for certain exposures. Call for specific recommendations.

COLORS: Ivory, Light Gray.

FILM THICKNESS PER COAT
A 5-6 mil/125-150 micron film is produced in one multi-spray coat. A total film thickness of 10-12 mils/250-300 microns is required for immersion service.

COVERAGE
1,092 mil ft^2/gal. (theoretical). For estimating purposes, 87 ft^2/gal (2.14 m^2/l) will produce a 10-12 mil/250-300 micron DFT film (20% loss included). Two multi-pass spray coats will produce the 10-12 mil/250-300 micron DFT film recommended for immersion service.

DRYING TIME
Surface will normally be tack free in 2 to 4 hours at 70°F/21°C. Refer to Curing section for more detailed curing information

VOC CONTENT

	Coating as Supplied (Determined Theoretically) 7159		Thinned 10% by Volume with Plasite Thinner #19 or 71 (Determined Theoretically)	
Color	**Lbs./Gal.**	**g/L**	**Lbs./Gal.**	**g/L**
Ivory	2.38 ± 2%	285 ± 2%	19 - 2.82 ± 2%	338 ± 2%
			71 - 2.79 ± 2%	334 ± 2%
	Coating as Supplied (Determined Theoretically) 7159 HAR		Thinned 10% by Volume with Plasite Thinner #19 or 71 (Determined Theoretically)	
Ivory	2.32 ± 2%	278 ± 2%	19 - 2.77 ± 2%	332 ± 2%
			71 - 2.73 ± 2%	327 ± 2%

VOC Content varies between colors. Contact Carboline Technical Service Department for VOC of specific colors.

THINNERS
PLASITE Thinner #71 is recommended for normal application temperatures and conditions.

PLASITE Thinner #19 is recommended for above normal application temperatures and where tank design requires a slower evaporating thinner to help control overspray.
The amounts of thinner required will vary depending on air and surface temperatures and application equipment. Normal application temperatures and conditions will require the addition of approximately 10% by volume with approximately 5% additional thinner added for each 5°F/3°C of increased temperature. Airless spray equipment and above normal temperatures require additional thinning.
It is recommended that the thinner included on each order amount to approximately 20% of the coating order.

PHYSICAL SPECIFICATIONS

Abrasion Resistance: 7159……..35 milligrams
7159 HAR……..27 milligrams

Average loss per 1000 cycles, Taber CS-17 Wheel, 1000 gram weight.Ivory color.

Surface Hardness:……Konig Pendulum Hardness
(ASTM Method D4366-84) 7159…of 113 seconds
7159 HAR…of 104 seconds
(Glass Standard = 250 seconds)

Pigments: Titanium dioxide, inerts and tinting colors.

Solids: 7159…84.1 ± 2% by weight; 68.1 ± 2% by volume
7159 HAR…85.3 ± 2% by weight; 68.3 ± 2% by volume

Pot Life:……..…Approximately 8 to 10 hours at 70°F

Shelf Life:……..24 months at 70°F
Material in stock should be turned upside down every 3 months.

Shipping Weight: 7159…Approximately 15 lbs./gal.
7159 HAR…Approximately 15.25 lbs./gal.

CHEMICAL RESISTANCE
Pressurized Atlas Cell testing has been conducted. The test conditions consisted of three area phase layers: the bottom immersion phase of tap water; a second phase of a blend of equal parts of toluene and kerosene; and a gas phase consisting of 15% carbon dioxide, 84.5% methane and .5% hydrogen sulfide.

A pressurized Atlas Cell test was conducted at a pressure of 500 psi with a temperature of 200°F for 110 days with no detrimental effect to the coating. A second pressurized Atlas Cell test was conducted at a pressure of 1000 psi with a temperature of 200°F for 25 days with no detrimental effect to the coating. A third test consisted of a pressurized Atlas Cell containing demineralized water. Pressure was approximately 15 psi at 250°F. Test was run for six months with no effect to the coating.

Non-pressurized Atlas Cell test conditions consist of DI water at 212°F. No detrimental effect to coating at completion of one year test.

Note: Although the chemical tests indicated show that PLASITE 7159 is unaffected as listed, it is not meant to imply an express guarantee in actual service. The service is dependent upon proper application and actual operating conditions and it is recommended that users confirm adaptability of the product for a specific use by their own tests. PLASITE 7159 is not suitable for service in corrosive acids or oxidizing service for continuous immersion.

CLEANUP THINNER: Thinner #71

CURING
For immersion service, curing will normally take place in 7 days at 70°F/21°C, 10 days at 60° to 69°F, or 14 days at 50°-59°F/10-16°C. As ventilation and other factors affect the time/cure of coatings, additional time allowance is recommended at any temperature if cure time is questioned. When exposure is severe and 70°F/21°C, force curing is recommended to obtain maximum resistance.

With adequate ventilation, when applying at temperatures above 70°F/21°C, coating surfaces will normally be tack free in 2 to 4 hours.

January 2007 replaces January 2004

Listed below are a few force curing schedules that may be used for time and work planning. When applying at 50-70°F/10-21°C, allow 16 to 24 hours air dry time prior to raising the metal temperature to the force curing temperature. When applying at temperatures above 70°F/21°C, allow 2 to 5 hours air dry time. After the appropriate air dry period, raise metal temperature approximately 30°F/17°C each 30 minutes until the desired force curing metal temperature is reached.

METAL TEMPERATURE	CURING TIME	METAL TEMPERATURE	CURING TIME
130°F/54°C	18 Hrs	170°F/77°C	3 ½ Hrs
140°F/60°C	10 Hrs	180°F/82°C	2 ½ Hrs
150°F/66°C	6 Hrs	190°F/88°C	2 Hrs
160°F/71°C	4 ½ Hrs	200°F/93°C	1 ¾ Hrs

Final cure may be checked by exposing coated surface to MIBK for 10 minutes. If no dissolving and only minor softening of film occurs, the curing can be considered complete. The film will reharden after exposure if cured.

SURFACE PREPARATION

Steel — Immersion Service

All sharp edges shall be ground to produce a radius and all imperfections, such as skip welds, delaminations, scabs, slivers and slag shall be corrected prior to abrasive blasting. Skip welds shall be welded solid.

Degrease surface prior to sandblasting. Organic solvents, alkaline solutions, steam, hot water with detergents or other systems that will completely remove dirt, oil, grease, etc. may be used. Used tanks may require additional decontamination.

The surface shall be blasted to an SSPC-SP5 or NACE No. 1 white metal surface using a Venturi blast nozzle supplied with 80-100 psi/6-7 bars. An anchor pattern or "tooth" in the metal shall correspond to approximately 20 to 25% of the total film thickness of the coating.

Contaminated grit shall not be used for the finish work. The blasting media used shall be a natural abrasive, or steel grit, or slag grit (similar or equal to BLACK BEAUTY®). These abrasives shall be sharp with a hard-cutting surface, properly graded, dry and of best quality. The media shall be of proper size to obtain the specified anchor pattern and shall be free of objectionable contaminants.

The anchor pattern shall be sharp and no evidence of a polished surface is allowed.

Remove all traces of grit and dust with a vacuum cleaner or by brushing. Care must be taken to avoid contaminating the surface with fingerprints or from detrimental material on the workers' clothes.

The surface temperature shall be maintained at a minimum of 5°F/3°C above the dew point to prevent oxidation of the surface. The coating shall be applied within the same day that the surface has been prepared.

Concrete

Contact Carboline for a recommendation.

Aluminum

Surface shall be clean and grease free with a blast produced anchor pattern or "tooth" as described earlier under STEEL. In addition, the blasted surface shall be given a chemical treatment such as:

ALODINE 1200S available from Henkel Surface Tech

IRIDITE 14-2 produced by MacDermid Incorporated

OAKITE CRYSCOAT 747LTS and OAKITE CRYSCOAT ULTRASEAL

produced by Oakite Products

APPLICATION

Mixing

The curing agent and coating are supplied in separate containers at a 4:1 ratio. Prestirring Part B will improve pourability. For splitting purposes, use 1 part curing agent to 4 parts coating by volume. Thoroughly mix coating, then add curing agent slowly and mix completely with coating. The coating should stand approximately 30 minutes after the curing agent has been thoroughly mixed.

Note: Continuous mixing of the coating during application is required for 7159 HAR.

Spray

All spray equipment should be thoroughly cleaned and the hose, in particular, should be free of old paint film and other contaminants.

Use standard production type spray guns:

GUN	FLUID	AIR
DeVilbiss JGA-510	E	797
Binks #2001	66-SS	63-PB
Graco P800	04	02

NOTE: Atomizing air spray is recommended for 7159 HAR because of the high rate of wear to spray tips and pump parts of airless spray equipment.

When airless spray equipment is used, the recommended liquid pressure is 1500-1800 psi/100-120 bars with tip size from .015-.021in/0.38-0.46 mm. Thinning requirements are more than for conventional spray.

Air supply shall be uncontaminated. Adjust air pressure to approximately 50 lbs./200 N at the gun and provide 5-10 lbs./20-40 N of pot pressure. Adjust spray gun by first opening liquid valve and then adjusting air valve to give an 8-12 in./20-30 cm wide spray pattern with best possible atomization.

Apply a "mist" bonding pass.
Allow to dry approximately one minute, but not long enough to allow film to completely dry.
Apply crisscross multi-passes maintaining an even continuous wet appearing film. This technique will enable a 7-8 mil/175-200 micron wet film (approximately 5-6 mil/125-150 micron DFT) to be applied per multi-pass coat. Repeat this procedure for the second coat to obtain a 10-12 mil/250-300 micron DFT.

Overcoat time will vary both with temperature and ventilation and will normally require 8 to 12 hours at 70°F/21°C for enclosed spaces with additional time needed if coating is being applied at lower temperatures. Remove all overspray by dry brushing or scraping if required.

Equipment must be thoroughly cleaned immediately after use with Plasite thinner to prevent the setting of the coating.

Note: Prior to spray application, stripe brush all welds, attachments and surface irregularities using PLASITE 7159/7159 HAR thinned a minimum of 50% by volume of PLASITE Thinner #19 or 71.

Brush

Recommended for small areas and repairs only. Use a high quality brush, and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. "Flow" the coating on rather than try to "brush out." Allow to dry tack-free. Repeat until sufficient film thickness is obtained. Normally a film thickness of 2.5-3 mils/63-75 microns can be obtained per coat by this method.

INSPECTION

Degree of surface preparation shall conform to appropriate specifications as outlined in SURFACE PREPARATION section. Film thickness of each coat and total dry film thickness of coating system shall be determined with a properly calibrated nondestructive magnetic gauge.

Refer to Plasite Bulletin PA-3, Section 3, for inspection requirements.

SAFETY

READ THIS NOTICE

SAFETY AND MISCELLANEOUS EQUIPMENT

For tank lining work or enclosed spaces, it is recommended that the operator provide himself with clean coveralls and rubber soled shoes and observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis.

THE SOLVENT IN THIS COATING IS FLAMMABLE AND CARE AS DEMANDED BY GOOD PRACTICE, OSHA, STATE AND LOCAL SAFETY CODES, ETC. MUST BE FOLLOWED CLOSELY. Keep away from heat, sparks and open flame and use necessary safety equipment, such as, air mask, explosion-proof electrical equipment, non-sparking tools and ladders, etc. Avoid contact with skin and breathing of vapor or spray mist. When working in tanks, rooms and other enclosed spaces, adequate ventilation must be provided. Refer to Plasite Bulletin PA-3. Keep out of the reach of children.

CAUTION - Read and follow all caution statements on this product data sheet, material safety data sheet and container label for this product.

January 2007 replaces January 2004

Sample MSDS (only)

Contractor to contact chemical supplier to confirm MSDS meets latest revisions of manufacturer.

MSDS Number: **M3588** * * * * * *Effective Date:* ***07/06/06*** * * * * * *Supercedes:* ***08/17/05***

MSDS MATERIAL SAFETY DATA SHEET

CHEMTREC: 800-424-9300 (USA)
703-527-3887(Outside USA and Canada)
CANUTEC: 613-996-6666

From: Mallinckrodt Baker, Inc
222 Red School Lane
Phillipsburg, NJ 08865

NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

Emergency Telephone Number: 908-859-2151

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

M A L L I N C K R O D T **J. T. B A K E R**

METHYL ISOBUTYL KETONE

1. Product Identification

Synonyms: 2-Pentanone,4-methyl-; Hexone; MIBK; Isopropylacetone
CAS No.: 108-10-1
Molecular Weight: 100.16
Chemical Formula: CH3COCH2CH(CH3)2
Product Codes:
J.T. Baker: 4855, 5384, 9212, 9320, 9322, 9405
Mallinckrodt: 5923, 6247, 6264

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Methyl Isobutyl Ketone	108-10-1	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! HARMFUL OR FATAL IF SWALLOWED. FLAMMABLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE PEROXIDES IN AIR. HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B

EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Causes irritation to the nose and throat. Concentrations above the TLV may cause headache, dizziness, nausea, shortness of breath, and vomiting. Higher concentrations may cause central nervous system depression and unconsciousness.
Ingestion:
May produce abdominal pain, nausea. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms expected to parallel inhalation.
Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.
Eye Contact:
Vapors can irritate the eyes. Splashes cause severe pain and irritation.
Chronic Exposure:
Prolonged skin contact may defat the skin and produce dermatitis. Based on animal studies, chronic exposure may affect liver and kidneys.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye problems, impaired respiratory function or central nervous system conditions may be more susceptible to the effects of this substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.
Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

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5. Fire Fighting Measures

Fire:
Flash point: 14C (57F) CC
Autoignition temperature: 448C (838F)
Flammable limits in air % by volume:
lel: 1.2; uel: 8.0
Flammable Liquid
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. Sensitivity to mechanical impact: Yes, if peroxides are formed. Sensitive to static discharge.
Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Before using bulk quantities of this material, test for presence of explosive peroxides. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
100 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):
50 ppm (TWA), 75 ppm (STEL)
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Polyvinyl alcohol (PVA) is a recommended material for personal protective equipment.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Odor:

Slight camphor odor
Solubility:
Moderately soluble in water (1-10%).
Specific Gravity:
0.80 @ 20C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
117C (243F)
Melting Point:
-85C (-121F)
Vapor Density (Air=1):
3.5
Vapor Pressure (mm Hg):
16 @ 20C (68F)
Evaporation Rate (BuAc=1):
1.6

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. May form explosive peroxides in air.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Aldehydes, Nitric Acid, Perchloric Acid, Strong Oxidizers. Violent reaction with Potassium-tert-butoxide.
Conditions to Avoid:
Heat, flame, ignition sources, air, incompatibles

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11. Toxicological Information

Oral rat LD50: 2080 mg/kg; Skin rabbit > 20 mL/kg; irritation eye rabbit, Standard Draize, 40 mg severe; investigated as a reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Methyl Isobutyl Ketone (108-10-1)	No	No	None

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12. Ecological Information

Environmental Fate:
When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may evaporate to a moderate extent. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to have a half-life between 1 and 10 days.
Environmental Toxicity:
This material is not expected to be toxic to terrestrial life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: METHYL ISOBUTYL KETONE
Hazard Class: 3
UN/NA: UN1245
Packing Group: II
Information reported for product/size: 20L

International (Water, I.M.O.)

Proper Shipping Name: METHYL ISOBUTYL KETONE
Hazard Class: 3
UN/NA: UN1245
Packing Group: II
Information reported for product/size: 20L

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Methyl Isobutyl Ketone (108-10-1)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Methyl Isobutyl Ketone (108-10-1)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Methyl Isobutyl Ketone (108-10-1)	No	No	Yes	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Methyl Isobutyl Ketone (108-10-1)	5000	U161	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: Yes (Pure / Liquid)

Australian Hazchem Code: 3[Y]E
Poison Schedule: S5
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the

MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **2** Flammability: **3** Reactivity: **1**
Label Hazard Warning:
DANGER! HARMFUL OR FATAL IF SWALLOWED. FLAMMABLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE PEROXIDES IN AIR. HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Label Precautions:
Keep away from heat, sparks and flame.
Avoid contact with eyes, skin and clothing.
Avoid breathing vapor.
Keep container tightly closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 3.
Disclaimer:
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