

NRP

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

PRODUCT: **RUST BUSTER** HMIS CODES: H F R
PRODUCT CODE: DR1 1 2 0
MANUFACTURER: CITGO
ADDRESS: 1701 GOLF ROAD, 1-1101 ROLLING MEADOWS, IL 60008-4295
INFORMATION: 800 967-7601 EMERGENCY: CHEMTREC 800-424-9300
DATE: 5/2003 PREPARER: R. Madariaga
DISTRIBUTOR: NATIONAL REFRIGERATION PRODUCTS
2900 SAMUEL DRIVE · BENSALEM, PA 19020-7306
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COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT NAME(s)	CAS NO.	CONCENTRATION (%)
STODDARD SOLVENT	8052-41-3	100
LIGHT HYDROTREATED DISTILLATE	64742-47-8	100
NONANES	MIXTURE	4-8
C10 ALKANES, ISOPARAFFINS AND CYCLOALKANES	MIXTURE	20-30
C11 ALKANES, ISOPARAFFINS AND CYCLOALKANES	MIXTURE	30-45
C12 ALKANES, ISOPARAFFINS AND CYCLOALKANES	MIXTURE	25-35

HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

PHYSICAL STATE: LIQUID

COLOR: TRANSPARENT, COLORLESS.

ODOR: LIGHT PARAFFINIC HYDROCARBON.

CAUTION! COMBUSTIBLE LIQUID; VAPOR MAY CAUSE FLASH FIRE! MIST OR VAPOR MAY IRRITATE THE EYES, MUCOUS MEMBRANES, AND RESPIRATORY TRACT! LIQUID CONTACT MAY CAUSE MINIMAL TO MODERATE EYE AND/OR MODERATE TO SEVERE SKIN IRRITATION AND INFLAMMATION! MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH THE SKIN! OVEREXPOSURES MAY CAUSE CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION AND/OR OTHER TARGET ORGAN EFFECTS! MAY BE HARMFUL OR FATAL IF INGESTED! ASPIRATION INTO THE LUNGS CAN CAUSE PULMONARY EDEMA AND CHEMICAL PNEUMONIA! SPILLS MAY CREATE A SLIPPING HAZARD!

MAJOR ROUTE(S) OF ENTRY:

SKIN CONTACT, EYE CONTACT, ABSORPTION, INHALATION

SIGNS AND SYMPTOMS OF ACUTE EXPOSURE

INHALATION: BREATHING HIGH CONCENTRATIONS OF VAPOR MAY CAUSE RESPIRATORY IRRITATION, EUPHORIA, EXCITATION OR GIDDINESS, HEADACHE, NAUSEA, VOMITING, ABDOMINAL PAIN, LOSS OF APPETITE, FATIGUE, MUSCULAR WEAKNESS, STAGGERING GAIT, AND CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION. CNS EFFECTS INCLUDE DIZZINESS, DROWSINESS, DISORIENTATION, VERTIGO, MEMORY LOSS, VISUAL DISTURBANCES, DIFFICULT WITH BREATHING, CONVULSIONS, UNCONSCIOUSNESS, PARALYSIS, COMA, AND EVEN DEATH, DEPENDING UPON THE LEVEL OF EXPOSURE CONCENTRATION AND/OR DURATION. VAPORS CAN REDUCE THE OXYGEN CONTENT IN AIR. APPROXIMATELY 20,000 PPM (OR 2 VOL.%) IN AIR IS FATAL TO HUMANS IN 5 TO 10 MINUTES. SUDDEN DEATH FROM CARDIAC ARREST (HEART ATTACK) MAY RESULT FROM EXPOSURE TO 5,000 PPM FOR ONLY 5 MINUTES. OXYGEN DEPRIVATION IS POSSIBLE IF WORKING IN CONFINED SPACES.

EYE CONTACT: ANIMAL TEST RESULTS ON SIMILAR MATERIALS SUGGEST THAT THIS PRODUCT CAN CAUSE MINIMAL TO MODERATE EYE IRRITATION UPON SHORT-TERM EXPOSURE. SYMPTOMS INCLUDE STINGING, WATERING, REDNESS, AND SWELLING.

SKIN CONTACT: ANIMAL TEST RESULTS ON SIMILAR MATERIALS SUGGEST THAT THIS PRODUCT CAN CAUSE MODERATE SKIN IRRITATION. SHORT-TERM CONTACT SYMPTOMS INCLUDE REDNESS, ITCHING, AND BURNING OF THE SKIN. THIS MATERIAL MAY ALSO BE ABSORBED THROUGH THE SKIN AND PRODUCE CNS DEPRESSION EFFECTS (SEE "INHALATION" ABOVE). IF THE SKIN IS DAMAGED, ABSORPTION INCREASES. PROLONGED AND/OR REPEATED CONTACT MAY CAUSE MODERATE TO SEVERE DERMATITIS. CHRONIC SYMPTOMS MAY INCLUDE DRYING, SWELLING, SCALING, BLISTERING, CRACKING, AND SEVERE TISSUE DAMAGE.

INGESTION: IF SWALLOWED, THIS MATERIAL MAY IRRITATE THE MUCOUS MEMBRANES OF THE MOUTH, THROAT, AND ESOPHAGUS. IT CAN BE READILY ABSORBED BY THE STOMACH AND INTESTINAL TRACT. SYMPTOMS INCLUDE A BURNING SENSATION OF THE MOUTH AND ESOPHAGUS, NAUSEA, VOMITING, DIZZINESS, STAGGERING GAIT, DROWSINESS, LOSS OF CONSCIOUSNESS, AND DELIRIUM, AS WELL AS ADDITIONAL CENTRAL NERVOUS SYSTEM (CNS) EFFECTS (SEE "INHALATION" ABOVE).

DUE TO ITS LIGHT VISCOSITY, THERE IS A DANGER OF ASPIRATION INTO THE LUNGS DURING VOMITING. ASPIRATION CAN RESULT IN SEVERE LUNG DAMAGE OR DEATH. PROGRESSIVE CNS DEPRESSION, RESPIRATORY INSUFFICIENCY, AND VENTRICULAR FIBRILLATION MAY ALSO RESULT IN DEATH.

CHRONIC HEALTH EFFECTS: CHRONIC EFFECTS OF INGESTION AND SUBSEQUENT ASPIRATION INTO THE LUNGS MAY CAUSE PNEUMATOCELE (LUNG CAVITY) FORMATION AND CHRONIC LUNG DYSFUNCTION.

REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH IRREVERSIBLE BRAIN AND NERVOUS SYSTEM DAMAGE (SOMETIMES REFERRED TO AS SOLVENT OR PAINTER'S SYNDROME). INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THIS PRODUCT MAY BE HARMFUL OR FATAL.

CONDITIONS AGGRAVATED BY EXPOSURE: PERSONNEL WITH PRE-EXISTING CENTRAL NERVOUS SYSTEM (CNS) DISEASE, NEUROLOGICAL CONDITIONS, SKIN DISORDERS, CHRONIC RESPIRATORY DISEASES, OR IMPAIRED LIVER OR KIDNEY FUNCTION SHOULD AVOID EXPOSURE.

TARGET ORGANS: THIS SUBSTANCE IS TOXIC TO LUNGS, CENTRAL NERVOUS SYSTEM, BRAIN, MUCOUS MEMBRANES, SKIN, EYES, AND POSSIBLE, THE BLOOD, LIVER, OR KIDNEYS.

CARCINOGENIC POTENTIAL: THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS AT CONCENTRATION ABOVE 0.1% WHICH ARE CONSIDERED CARCINOGENIC BY OSHA, IARC, OR NTP.

OSHA HEALTH HAZARD CLASSIFICATION: IRRITANT

OSHA PHYSICAL HAZARD CLASSIFICATION: COMBUSTIBLE

FIRST AID MEASURES

TAKE PROPER PRECAUTIONS TO ENSURE YOUR OWN HEALTH AND SAFETY BEFORE ATTEMPTING RESCUE OR PROVIDING FIRST AID. FOR MORE SPECIFIC INFORMATION, REFER TO EXPOSURE CONTROLS AND PERSONAL PROTECTION SECTION.

INHALATION: IMMEDIATELY MOVE VICTIM TO FRESH AIR. IF VICTIM IS NOT BREATHING, IMMEDIATELY BEGIN RESCUE BREATHING. IF HEART HAS STOPPED, IMMEDIATELY BEGIN CARDIOPULMONARY RESUSCITATION (CPR). IF BREATHING IS DIFFICULT, 100 PERCENT HUMIDIFIED OXYGEN SHOULD BE ADMINISTERED BY A QUALIFIED INDIVIDUAL. SEEK MEDICAL ATTENTION IMMEDIATELY.

EYES: CHECK FOR AND REMOVE CONTACT LENSES. IF IRRITATION OR REDNESS DEVELOPS, FLUSH EYES WITH COOL, CLEAN, LOW-PRESSURE WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART TO ENSURE COMPLETE IRRIGATION OF THE EYE AND EYELID TISSUE. DO NOT USE EYE OINTMENT. SEEK MEDICAL ATTENTION IMMEDIATELY.

SKIN: REMOVE CONTAMINATED SHOES AND CLOTHING. FLUSH AFFECTED AREA WITH LARGE AMOUNTS OF WATER. IF SKIN SURFACE IS DAMAGED, APPLY A CLEAN DRESSING AND SEEK MEDICAL ATTENTION. DO NOT USE OINTMENTS. IF SKIN SURFACE IS NOT DAMAGED, CLEAN AFFECTED AREA THOROUGHLY WITH MILD SOAP AND WATER. SEEK MEDICAL ATTENTION IF TISSUE APPEARS DAMAGED OR IF PAIN OR IRRITATION PERSISTS.

INGESTION: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH. IF SPONTANEOUS VOMITING IS ABOUT TO OCCUR, PLACE VICTIMS HEAD BELOW KNEES. IF VICTIM IS DROWSY OR UNCONSCIOUS, PLACE ON THE LEFT SIDE WITH HEAD DOWN. NEVER GIVE ANYTHING BY MOUTH TO A PERSON WHO IS NOT FULLY CONSCIOUS. DO NOT LEAVE VICTIM UNATTENDED. SEEK MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN: INHALATION OVEREXPOSURE CAN PRODUCE TOXIC EFFECTS. MONITOR FOR RESPIRATORY DISTRESS. IF COUGH OR DIFFICULTY IN BREATHING DEVELOPS, EVALUATE FOR UPPER RESPIRATORY TRACT INFLAMMATION, BRONCHITIS, AND PNEUMONITIS. VIGOROUS ANTI-INFLAMMATORY/STEROID TREATMENT MAY BE REQUIRED AT FIRST EVIDENCE OF UPPER AIRWAY OR PULMONARY EDEMA.

ADMINISTER 100 PERCENT HUMIDIFIED SUPPLEMENTAL OXYGEN WITH ASSISTED VENTILATION, AS REQUIRED.

IF INGESTED, THIS MATERIAL PRESENTS A SIGNIFICANT ASPIRATION/CHEMICAL PNEUMONITIS HAZARD. AS A RESULT, INDUCTION OF EMESIS IS NOT RECOMMENDED. ADMINISTER AN AQUEOUS SLURRY OR ACTIVATED CHARCOAL FOLLOWED BY A CATHARTIC SUCH AS MAGNESIUM CITRATE OR SORBITOL. ALSO, TREATMENT MAY INVOLVE CAREFUL GASTRIC LAVAGE IF PERFORMED SOON AFTER INGESTION OR IN PATIENTS WHO ARE COMATOSE OR AT RISK OF CONVULSING. PROTECT THE AIRWAY BY CUFFED ENDOTRACHEAL INTUBATION OR BY PLACEMENT OF THE BODY IN A TRENDELENBURG AND LEFT LATERAL DECUBITUS POSITION. OBTAIN CHEST X-RAY AND LIVER FUNCTION TESTS. MONITOR FOR CARDIAC FUNCTION, RESPIRATORY DISTRESS AND ARTERIAL BLOOD GASES IN SEVERE EXPOSURE CASES.

FIRE FIGHTING MEASURES

NFPA FLAMMABILITY CLASSIFICATION: OSHA/NFPA CLASS-III-A COMBUSTIBLE LIQUID. MODERATELY COMBUSTIBLE!

FLASH POINT METHOD: CLOSED CUP-61 TO 63 DEG. C (142 TO 146 DEG. F)

LOWER FLAMMABLE LIMIT: AP 0.8 % **UPPER FLAMMABLE LIMIT:** AP 6.0%

AUTOIGNITION TEMPERATURE: AP 235 DEG. C (455 DEG. F)

HAZARDOUS COMBUSTION PRODUCTS: BURNING OR EXCESSIVE HEATING MAY PRODUCE SMOKE, CARBON MONOXIDE, CARBON DIOXIDE, AND POSSIBLY OTHER HARMFUL GASES/VAPORS.

SPECIAL PROPERTIES: COMBUSTIBLE LIQUID! THIS MATERIAL RELEASES VAPORS AT OR APPROACHING ITS FLASH POINT TEMPERATURE. WHEN MIXED WITH AIR IN CERTAIN PROPORTIONS AND EXPOSED TO AN IGNITION SOURCE, ITS VAPOR CAN CAUSE A FLASH FIRE. USE ONLY WITH ADEQUATE VENTILATION. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL LONG DISTANCES ALONG THE GROUND TO AN IGNITION SOURCE AND FLASH BACK. MAY CREATE VAPOR/AIR EXPLOSION HAZARD IN CONFINED SPACES SUCH AS SEWERS. IF CONTAINER IS NOT PROPERLY COOLED, IT CAN RUPTURE IN THE HEAT OF A FIRE.

EXTINGUISHER MEDIA: SMALL FIRES: USE DRY CHEMICAL, CARBON DIOXIDE, FOAM, WATER FOG, OR INERT GAS (NITROGEN). LARGE FIRES: USE FOAM, WATER FOG, OR WATER SPRAY. WATER FOG AND SPRAY ARE EFFECTIVE IN COOLING CONTAINERS AND ADJACENT STRUCTURES BUT MIGHT CAUSE FROTHING AND/OR MAY NOT ACHIEVE EXTINGUISHMENT. A WATER JET MAY BE USED TO COOL THE VESSEL'S EXTERNAL WALLS TO PREVENT PRESSURE BUILD-UP, AUTOIGNITION, OR EXPLOSION. NEVER USE A WATER JET DIRECTLY ON THE FIRE BECAUSE IT MAY SPREAD THE FIRE TO A LARGER AREA.

FIRE FIGHTING PROTECTIVE CLOTHING: FIREFIGHTERS MUST USE FULL BUNKER GEAR INCLUDING NIOSH-APPROVED POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST POTENTIAL HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS AND OXYGEN DEFICIENCIES. EVACUATE AREA AND FIGHT THE FIRE FROM A MAXIMUM DISTANCE OR USE UNMANNED HOSE HOLDERS OR MONITOR NOZZLES. COVER SPILLING LIQUID WITH FOAM. CONTAINERS CAN BUILD PRESSURE IF EXPOSED TO RADIANT HEAT; COOL ADJACENT CONTAINERS WITH FLOODING QUANTITIES OF WATER UNTIL WELL AFTER THE FIRE IS OUT. WITHDRAW IMMEDIATELY FROM THE AREA IF THERE IS A RISING SOUND FROM VENTING SAFETY DEVICES OR DISCOLORATION OF VESSELS, TANKS, OR PIPELINES. BE AWARE THE

BURNING LIQUID WILL FLOAT ON WATER. NOTIFY APPROPRIATE AUTHORITIES IF LIQUID(S) ENTER SEWERS/WATERWAYS.

ACCIDENTAL RELEASE MEASURES

TAKE PROPER PRECAUTIONS TO ENSURE YOUR OWN HEALTH AND SAFETY BEFORE ATTEMPTING SPILL CONTROL OR CLEAN-UP.

COMBUSTIBLE LIQUID! RELEASE CAUSES AND IMMEDIATE FIRE OR EXPLOSION HAZARD. EVACUATE ALL NON-ESSENTIAL PERSONNEL FROM IMMEDIATE AREA AND ESTABLISH A "REGULATED ZONE" WITH SITE CONTROL AND SECURITY. A VAPOR-SUPPRESSING FOAM MAY BE USED TO REDUCE VAPORS. ELIMINATE ALL IGNITION SOURCES. ALL EQUIPMENT USED WHEN HANDLING THIS MATERIAL MUST BE GROUNDED. STOP THE LEAK IF IT CAN BE DONE WITHOUT RISK. DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL. REMOVE SPILLAGE IMMEDIATELY FROM HARD, SMOOTH WALKING AREAS. PREVENT ITS ENTRY INTO WATERWAYS, SEWERS, BASEMENTS, OR CONFINED AREAS. ABSORB OR COVER WITH DRY EARTH, SAND, OR OTHER NON-COMBUSTIBLE MATERIAL AND TRANSFER TO APPROPRIATE WASTE CONTAINERS. USE CLEAN, NON-SPARKING TOOLS TO COLLECT ABSORBED MATERIAL.

FOR LARGE SPILLS, SECURE THE AREA AND CONTROL ACCESS. DIKE FAR AHEAD OF A LIQUID SPILL TO ENSURE COMPLETE COLLECTION. WATER MIST OR SPRAY MAY BE USED TO REDUCE OR DISPERSE VAPORS; IT MAY NOT PREVENT IGNITION IN CLOSED SPACES. THIS MATERIAL WILL FLOAT ON WATER AND ITS RUN-OFF MAY CREATE AN EXPLOSION OR FIRE HAZARD. VERIFY THAT RESPONDERS ARE PROPERLY HAZWOPER-TRAINED AND WEARING APPROPRIATE RESPIRATORY EQUIPMENT AND FIRE-RESISTANT PROTECTIVE CLOTHING DURING CLEANUP OPERATIONS. IN AN URBAN AREA, CLEANUP SPILL AS SOON AS POSSIBLE; IN NATURAL ENVIRONMENTS, CLEANUP ON ADVICE FROM SPECIALISTS. PICK UP FREE LIQUID FROM RECYCLE AND/OR DISPOSAL IF IT CAN BE ACCOMPLISHED SAFELY WITH EXPLOSION-PROOF EQUIPMENT. COLLECT ANY EXCESS MATERIAL WITH ABSORBENT PADS, SAND, OR OTHER INERT NON-COMBUSTIBLE ABSORBENT MATERIALS, PLACE INTO APPROPRIATE WASTE CONTAINERS FOR LATER DISPOSAL. COMPLY WITH ALL LAWS AND REGULATIONS.

HANDLING AND STORAGE

HANDLING: A SPILL OR LEAK CAN CAUSE AN IMMEDIATE FIRE/EXPLOSION HAZARD. KEEP CONTAINERS CLOSED AND DO NOT HANDLE OR STORE NEAR HEAT, SPARKS, OR ANY OTHER POTENTIAL IGNITION SOURCES. BOND AND GROUND ALL EQUIPMENT BEFORE TRANSFERRING THIS MATERIAL FROM ONE CONTAINER TO ANOTHER. DO NOT CONTACT WITH OXIDIZABLE MATERIALS. DO NOT BREATHE VAPOR. USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION. NEVER SIPHON BY MOUTH. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. PREVENT CONTACT WITH FOOD, CHEWING, OR SMOKING MATERIALS. DO NOT TAKE INTERNALLY.

WHEN PERFORMING REPAIRS AND MAINTENANCE ON CONTAMINATED EQUIPMENT, KEEP UNNECESSARY PERSONS AWAY FROM THE AREA. ELIMINATE ALL POTENTIAL IGNITION SOURCES. DRAIN AND PURGE EQUIPMENT, AS NECESSARY, TO REMOVE

MATERIAL RESIDUES. USE GLOVES CONSTRUCTED OF IMPERVIOUS MATERIALS AND PROTECTIVE CLOTHING IF DIRECT CONTACT IS ANTICIPATED. PROVIDE VENTILATION TO MAINTAIN EXPOSURE POTENTIAL BELOW APPLICABLE EXPOSURE LIMITS. PROMPTLY REMOVE CONTAMINATED CLOTHING. WASH EXPOSED SKIN THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

EMPTY CONTAINERS MAY CONTAIN MATERIAL RESIDUES WHICH CAN IGNITE WITH EXPLOSIVE FORCE. MISUSE OF EMPTY CONTAINERS CAN BE DANGEROUS IF USED TO STORE TOXIC, FLAMMABLE, OR REACTIVE MATERIALS. CUTTING OR WELDING OF EMPTY CONTAINERS CAN CAUSE FIRE, EXPLOSION, OR RELEASE OF TOXIC FUMES FROM RESIDUES. DO NOT PRESSURIZE OR EXPOSE EMPTY CONTAINERS TO OPEN FLAME, SPARKS, OR HEAT. KEEP CONTAINER CLOSED AND DRUM BUNGS IN PLACE. ALL LABEL WARNINGS AND PRECAUTIONS MUST BE OBSERVED. RETURN EMPTY DRUMS TO A QUALIFIED RECONDITIONER. CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL AUTHORITIES BEFORE REUSING, RECONDITIONING, RECLAIMING, RECYCLING, OR DISPOSING OF EMPTY CONTAINERS AND/OR WASTE RESIDUES OF THIS MATERIAL.

STORAGE: STORE AND TRANSPORT IN ACCORDANCE WITH ALL APPLICABLE LAWS. KEEP CONTAINERS TIGHTLY CLOSED AND STORE IN A COOL, DRY, WELL-VENTILATED PLACE, PLAINLY LABELED, AND OUT OF CLOSED VEHICLES. KEEP AWAY FROM ALL IGNITION SOURCES! GROUND ALL EQUIPMENT CONTAINING THIS MATERIAL. CONTAINERS SHOULD BE ABLE TO WITHSTAND PRESSURES EXPECTED FROM WARMING AND COOLING IN STORAGE. THIS COMBUSTIBLE LIQUID SHOULD BE STORED IN A SEPARATE SAFETY CABINET OR ROOM. ALL ELECTRICAL EQUIPMENT IN AREAS WHERE THIS MATERIAL IS STORED OR HANDLED SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE NFPA'S NATIONAL ELECTRICAL CODE (NEC).

EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS: PROVIDE EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO KEEP THE AIRBORNE CONCENTRATIONS OF VAPOR AND/OR MISTS BELOW THE PERTINENT EXPOSURE LIMITS (SEE BELOW). ALL ELECTRICAL EQUIPMENT SHOULD COMPLY WITH THE NFPA NEC STANDARDS. ENSURE THAT AN EMERGENCY EYEWASH STATION AND SAFETY SHOWER ARE NEAR THE WORK-STATION LOCATION.

PERSONAL PROTECTION EQUIPMENT: PERSONAL PROTECTION EQUIPMENT SHOULD BE SELECTED BASED UPON THE CONDITIONS UNDER WHICH THIS MATERIAL IS USED. A HAZARD ASSESSMENT OF THE WORK AREA FOR PPE REQUIREMENTS SHOULD BE CONDUCTED BY A QUALIFIED PROFESSIONAL PURSUANT TO OSHA REGULATIONS.

EYE PROTECTION: SAFETY GLASSES WITH SIDE SHIELDS ARE RECOMMENDED AS A MINIMUM PROTECTION. DURING TRANSFER OPERATIONS OR WHEN THERE IS A LIKELIHOOD OF MISTING, SPLASHING, OR SPRAYING, CHEMICAL GOGGLES AND FACE SHIELD SHOULD BE WORN. SUITABLE EYEWASH SHOULD BE READILY AVAILABLE.

HAND PROTECTION: AVOID SKIN CONTACT AND USE GLOVES (DISPOSABLE PVC, NITRILE, OR PVC/NBR). BEFORE EATING, DRINKING, SMOKING, USE OF TOILET FACILITIES, OR LEAVING WORK, WASH HANDS WITH PLENTY OF MILD SOAP AND WATER. DO NOT USE GASOLINE, KEROSENE, OTHER SOLVENTS, OR HARSH ABRASIVE SKIN CLEANERS.

BODY PROTECTION: AVOID SKIN CONTACT. IT IS RECOMMENDED THAT FIRE-RETARDANT GARMENTS (e.g. NOMEX) BE WORN WHILE WORKING WITH FLAMMABLE AND COMBUSTIBLE LIQUIDS. IF SPLASHING OR SPRAYING IS EXPECTED, CHEMICAL-RESISTANT PROTECTIVE CLOTHING (TYVEK, NITRILE, OR NEOPRENE) SHOULD BE WORN. THIS MIGHT INCLUDE LONG-SLEEVES, APRON, SLICKER SUIT, BOOTS, AND ADDITIONAL FACIAL PROTECTION. IF GENERAL CONTACT OCCURS, IMMEDIATELY REMOVE SOAKED CLOTHING AND TAKE A SHOWER. CONTAMINATED LEATHER GOODS SHOULD BE REMOVED PROMPTLY AND DISCARDED.

RESPIRATORY PROTECTION: FOR UNKNOWN VAPOR CONCENTRATIONS USE A POSITIVE-PRESSURE, PRESSURE-DEMAND, SELF-CONTAINED BREATHING APPARATUS (SCBA). FOR KNOWN VAPOR CONCENTRATIONS ABOVE THE OCCUPATIONAL EXPOSURE GUIDELINES (SEE BELOW), USE AN NIOSH-APPROVED ORGANIC VAPOR RESPIRATOR IF ADEQUATE PROTECTION IS PROVIDED. PROTECTION FACTORS VARY DEPENDING UPON THE TYPE OF RESPIRATOR USED. RESPIRATOR USE SHOULD FOLLOW OSHA REQUIREMENTS (29CFR 1910.134) OR EQUIVALENT STANDARD (e.g. ANSI Z88.2)

GENERAL COMMENTS: WARNING! ODOR IS AN INADEQUATE WARNING FOR HAZARDOUS CONDITIONS.

THIS PRODUCT IS SOMETIMES USED AS A DRY-CLEANING SOLVENT. RETAINED SOLVENT PRESENT IN ABSORBENT CLOTHING (e.g. SHOULDER PADS, LEATHER BELTS OR STRAPS, ETC.) WHICH REMAINS IN CONTACT WITH THE SKIN FOR PROLONGED PERIODS HAS CAUSED SEVERE SKIN IRRITATION INCLUDING REDNESS, SWELLING, BURNS, AND SEVERE TISSUE DAMAGE. CARE MUST BE TAKEN TO ENSURE THAT GARMENTS ARE COMPLETELY DRY BEFORE BEING WORN.

OCCUPATIONAL EXPOSURE GUIDELINES:

SUBSTANCE	APPLICABLE WORKPLACE EXPOSURE LEVELS
1. STODDARD SOLVENT	TWA: 100 (PPM) FROM ACGIH (TLV) (2000) TWA: 500 (PPM) FROM OSHA (PEL) (1989)
2. NONANE, ALL ISOMERS	TWA: 200 (PPM) FROM ACGIH (TLV) (2000) TWA: 200 (PPM) FROM OSHA (PEL) (1989)

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	LIQUID
COLOR:	TRANSPARENT, COLORLESS
ODOR:	LIGHT PARAFFINIC HYDROCARBON
Ph:	NA
BOILING POINT/RANGE:	188 TO 207 DEG. C
MELTING/FREEZING POINT:	-85 TO -25 DEG. C
VAPOR PRESSURE:	2.9 MM OF Hg AT 20 DEG. C
SPECIFIC GRAVITY:	0.79-0.80 (WATER =1)
VAPOR DENSITY:	5.1 (AIR=1)
VISCOSITY (cSt @ 40 DEG. C):	LT 20
WATER SOLUBILITY:	NEGLIGIBLE IN COLD WATER (LT 0.01)
VOLATILE CHARACTERISTICS:	VOLATILE ORGANIC COMPOUNDS (VOC's) CONTENT = 100 %; 793 GM/L

ADDITIONAL PROPERTIES:

ALKANE, ISOPARAFFIN, AND CYCLOALKANE HYDROCARBONS CONTENT = GT 99 WT. % (ASTM D-1319);
C9-C11 AROMATIC HYDROCARBON CONTENT = LT 1 WT. % (ASTM D-1319);
AVERAGE DENSITY AT 60 DEG. F = 6.611 LBS./GAL. (ASTM D-2161);
ANILINE CLOUD POINT TEMPERATURE = 162 DEG. F (72 DEG. C) (ASTM D-611);
KAURI-BUTANOL (KB) VALUE – 31 (ASTM D- 1133);
BOILING POINT TEMPERATURE RANGE = 370 DEG. TO 415 DEG. (188 TO 213 DEG. C) (ASTM D –2887);
DRY POINT TEMPERATURE = 401 DEG. F (205 DEG. C) (ASTM D-86);
EVAPORATION RATE = 0.08 WHEN N-Butyl acetate = 1.0;
HEAT VALUE = 20,633 BTU.

STABILITY AND REACTIVITY

STABILITY: STABLE

HAZARDOUS DECOMPOSITION PRODUCTS: NO SUBSTANCES ARE READILY IDENTIFIED FROM COMPOSITION; AND, NO DEGRADATION DATE IS AVAILABLE.

CONDITIONS TO AVOID: KEEP AWAY FROM EXTREME HEAT, STRONG ACIDS, AND STRONG OXIDIZING CONDITIONS.

MATERIAL INCOMPATIBILITY: STRONG ACIDS, ALKALIES, AND OXIDIZERS SUCH AS LIQUID CHLORINE, OTHER HALOGENS, HYDROGEN PEROXIDE, AND OXYGEN.

HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR.

TOXICOLOGICAL INFORMATION

FOR OTHER HEALTH-RELATED INFORMATION, REFER TO THE HAZARDS IDENTIFICATION SECTION.

TOXICITY DATA:

STODDARD SOLVENT OR MINERAL SPIRITS:

ORAL (LD50): ACUTE: GT 34,600 mg/kg (Rat).

GAS (LC50): ACUTE: GT 21,400 mg/m³ for 4 hrs. (Rat).

DERMAL (LD50): ACUTE: 15,400 mg/kg (Rabbit).

n-NONANE:

GAS (LC50): ACUTE: 3,200 ppm for 4 hrs. (Rat).

INTRAVENOUS (LD50): ACUTE: 218 mg/kg (Mouse).

STODDARD SOLVENT OR MINERAL SPIRITS: ARE MILD TO MODERATE EYE IRRITANT AND A SKIN AND RESPIRATORY TRACT IRRITANT. HUMAN VOLUNTEERS EXPOSED TO AN AIRBORNE CONCENTRATION OF 400 PPM EXPERIENCE NO ILL EFFECT. SATURATED VAPORS IN AIR (OR AP 8,200 mg/m³ (Mouse).

BASED UPON LABORATORY ANIMAL STUDIES, REPEATED DIRECT APPLICATION OF STODDARD SOLVENT TO THE SKIN CAN PRODUCE DEFATTING DERMATITIS, KIDNEY DAMAGE, AND CHANGES IN BLOOD-FORMING CAPACITY. RATS DEVELOPED KIDNEY DAMAGE AND ELEVATED BLOOD UREA NITROGEN LEVELS WHEN EXPOSED TO A CONCENTRATION OF 1.9 mg/L FOR 65 DAYS. THE KIDNEY DAMAGE IN RATS APPEARED

TO INVOLVE BOTH THE TUBULES AND GLOMERULI, BUT ONLY OCCURRED IN MALES; SO THESE EFFECTS MAY NOT BE PERTINENT TO HUMANS. MALE RATS EXPOSED TO AIRBORNE CONCENTRATION OF 100, 150 AND 1,500 ppm FOR 6 HRS. PER DAY, 5 DAY PER WEEK FOR 90 DAYS DID NOT DEVELOP ANY FUNCTIONAL OR HISTOLOGICAL SIGNS OR NEUROTOXICITY. STODDARD SOLVENT AND MINERAL SPIRITS WERE NOT MUTAGENIC IN THE SALMONELLA/MICROSOME (AMES) ASSAY, THE IN-VIVO MOUSE BONE MARROW CELL CHROMOSOME ABBERATIONS ASSAY, AND THE IN-VITRO RAT SISTER CHROMATID EXCHANGES ASSAY.

RATS INHALING N-NONANE AT AN AIRBORNE CONCENTRATION OF 1,500 ppm FOR 7 DAYS DISPLAYED MILD TREMORS AND LOSS OF COORDINATION. INHALATION OF 1,600 ppm FOR 6 HOURS PER DAY FOR 90 DAYS SHOWED ANIMAL WEIGHT LOSS OR DECREASED WEIGHT AND CHANGES IN THE STRUCTURE OF THEIR SALIVARY GLANDS. AND, LIVER DAMAGE AND AN ALTERED RESPONSE TO DRUGS WERE SEEN IN RATS GIVEN N-NONANE FOR 2 TO 7 DAYS.

ECOLOGICAL INFORMATION

ECOTOXICITY: ECOLOGICAL EFFECTS TESTING HAS NOT BEEN CONDUCTED ON THIS MATERIAL. IF SPILLED, THIS NAPHTHA, ITS STORAGE TANK WATER BOTTOMS AND SLUDGE, AND ANY CONTAMINATED SOIL OR WATER MAY BE HAZARDOUS TO HUMAN, ANIMAL, AND AQUATIC LIFE. SOME VOLATILE AROMATIC HYDROCARBON COMPONENTS OF THIS PRODUCT MAY BE RELEASED AND POSSIBLY CONTRIBUTE TO THE CREATION OF ATMOSPHERIC SMOG.

USING RAINBOW TROUT (*ONCORHYNCHUS MYKISS*), SIMILAR NAPHTHAS SHOWED A 96-HOUR TL_m (MEDIAN TOXIC LIMIT) FROM 10 ppm TO 20 ppm IN AMBIENT SALTWATER. 24- HOUR TL_{ms} RESULTED IN 2,990 ppm AND 200 ppm WHEN USING BLUEGILL SUNFISH (*LEPOMIS MACROCHIRUS*) AND JUVENILE AMERICAN SHAD (*SQUALIUS CEPHALUS*), RESPECTIVELY. BASED UPON ACTUAL SPILL INCIDENT INVESTIGATIONS, SIMILAR NAPHTHAS HAVE BEEN SHOWN TO BIOACCUMULATE IN TISSUES OF VARIOUS FISH FROM A 1 ppm TO 10 ppm LEVELS.

ENVIRONMENTAL FATE: THIS NAPHTHA IS POTENTIALLY TOXIC TO FRESHWATER AND SALTWATER ECOSYSTEMS. IT WILL NORMALLY FLOAT ON WATER WITH ITS LIGHTER COMPONENTS EVAPORATION RAPIDLY. IN STAGNANT OR SLOW-FLOWING WATERWAYS, A NAPHTHA HYDROCARBON LAYER CAN COVER A LARGE SURFACE AREA. AS A RESULT, THIS COVERING LAYER MIGHT LIMIT OR ELIMINATE NATURAL ATMOSPHERIC OXYGEN TRANSPORT INTO THE WATER. WITH TIME, IF NOT REMOVED, OXYGEN DEPLETION IN THE WATERWAY MIGHT BE ENOUGH TO CAUSE A FISH KILL OR CREATE AN ANAEROBIC ENVIRONMENT. THIS COATING ACTION CAN ALSO BE HARMFUL OR FATAL TO PLANKTON, ALGAE, AQUATIC LIFE, AND WATER BIRDS. ADDITIONALLY, POTABLE WATER AND BOILER FEED SYSTEMS SHOULD NEVER BE ALLOWED MORE THAN THE 5 ppm CONTAMINATION FROM THIS MATERIAL.

FOR ADDITIONAL ECOLOGICAL INFORMATION CONCERNING COMPONENTS OF THIS PRODUCT, USERS SHOULD REFER TO THE HAZARDOUS SUBSTANCES DATA BANK AND THE OIL AND HAZARDOUS MATERIALS/TECHNICAL ASSISTANCE DATA SYSTEM (OHM/TADS) MAINTAINED BY THE U.S. NATIONAL LIBRARY OF MEDICINE.

DISPOSAL CONSIDERATIONS

HAZARD CHARACTERISTIC AND REGULATORY WASTE STREAM CLASSIFICATION CAN CHANGE WITH PRODUCT USE. ACCORDINGLY, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE PROPER STORAGE, TRANSPORTATION, TREATMENT AND/OR DISPOSAL METHODOLOGIES FOR SPENT MATERIALS AND RESIDUES AT THE TIME OF DISPOSITION.

MAXIMIZE MATERIAL RECOVERY FOR REUSE OR RECYCLING. IF SPILLED MATERIAL IS INTRODUCED INTO A WASTEWATER TREATMENT SYSTEM, CHEMICAL AND BIOLOGICAL OXYGEN DEMAND (COD AND BOD) WILL LIKELY INCREASE. THIS MATERIAL IS BIODEGRADABLE IF GRADUALLY EXPOSED TO MICROORGANISMS, PREFERABLY IN AN AEROBIC ENVIRONMENT. IN SEWAGE-SEEDED WASTEWATER, AT OR BELOW CONCENTRATIONS OF 0.2 VOL. % OF THIS NAPHTHA, THERE IS LITTLE OR NO EFFECT ON BIO-OXIDATION AND/OR DIGESTION. HOWEVER, AT 1 VOL. %, IT DOUBLES THE REQUIRED DIGESTION PERIOD. HIGHER CONCENTRATIONS INTERFERE WITH FLOC FORMATION AND SLUDGE SETTLING AND ALSO PLUG FILTERS OR EXCHANGE BEDS. VAPOR EMISSIONS FROM A BIO-OXIDATION PROCESS CONTAMINATED BY THIS MATERIAL MIGHT PROVE TO BE A HEALTH HAZARD.

CONDITIONS OF USE MAY CAUSE THIS MATERIAL TO BECOME A HAZARDOUS WASTE, AS DEFINED BY FEDERAL OR STATE REGULATIONS. IT IS THE RESPONSIBILITY OF TH USER TO DETERMINE IF THE MATERIAL IS A RCRA "HAZARDOUS WASTE" AT THE TIME OF DISPOSAL. TRANSPORTATION, TREATMENT, STORAGE, AND DISPOSAL OF WASTE MATERIAL MUST BE CONDUCTED IN ACCORDANCE WITH RCRA REGULATIONS (SEE 40 CFR PARTS 260-271). STATE AND/OR LOCAL REGULATIONS MIGHT BE EVEN MORE RESTRICTIVE. CONTACT THE RCRA/SUPERFUND HOTLINE AT (800) 424-9346 OR YOUR US EPA OFFICE FOR GUIDANCE CONCERNING CASE SPECIFIC DISPOSAL ISSUES.

TRANSPORT INFORMATION

DOT STATUS: THIS MATERIAL IS REGULATED BY THE U.S. DEPARTMENT OF TRANSPORTATION (DOT) ONLY WHEN TRANSPORTED IN BULK CONTAINERS, VIA VESSEL, OR VIA AIRCRAFT.

REGULATORY INFORMATION

TSCA: THIS PRODUCT AND/OR ITS COMPONENTS ARE LISTED ON THE TOXIC SUBSTANCE CONTROL ACT (TSCA) INVENTORY.

CERCLA: THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) REQUIRES NOTIFICATION OF THE NATIONAL RESPONSE CENTER CONCERNING RELEASE OF QUANTITIES OF "HAZARDOUS SUBSTANCES" DOES NOT INCLUDE PETROLEUM, INCLUDING CRUDE OIL OR ANY FRACTION THEREOF WHICH IS NOT OTHERWISE SPECIFICALLY DESIGNATED IN 40 CFR 302.4. THERE ARE NO CHEMICAL SUBSTANCES IN THIS PRODUCT SUBJECT TO THIS STATUTE.

SARA 302/304: THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III REQUIRES FACILITIES SUBJECT TO SUBPARTS 302 AND 304 TO SUBMIT EMERGENCY PLANNING AND NOTIFICATION INFORMATION BASED ON THRESHOLD PLANNING QUANTITIES (TPQs) AND REPORTABLE QUANTITIES (RQs) FOR "EXTREMELY HAZARDOUS SUBSTANCES" LISTED IN 40 CFR 302.4 AND 40 CFR 355. NO COMPONENTS WERE IDENTIFIED.

SARA 313: THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS IN CONCENTRATIONS AT OR ABOVE DE MINIMIS LEVELS THAT ARE LISTED AS TOXIC CHEMICALS IN 40 CFR PART 372 PURSUANT TO THE REQUIREMENTS OF SECTION 313 OF SARA.

SARA 311/ 312: THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III REQUIRES FACILITIES SUBJECT TO THIS SUBPART TO SUBMIT AGGREGATE INFORMATION ON CHEMICALS BY "HAZARD CATEGORY" AS DEFINED IN 40 CFR 370.2. THIS MATERIAL WOULD BE CLASSIFIED UNDER THE FOLLOWING HAZARD CATEGORIES: **FIRE HAZARD, ACUTE (IMMEDIATE) HEALTH HAZARD AND CHRONIC (DELAYED) HEALTH HAZARD.**

CWA: THIS MATERIAL IS CLASSIFIED AS AN OIL UNDER SECTION 311 OF THE CLEAN WATER ACT (CWA) AND THE OIL POLLUTION ACT OF 1990 (OPA). DISCHARGES OR SPILLS WHICH PRODUCE A VISIBLE SHEEN ON WATERS OF THE UNITED STATES, THEIR ADJOINING SHORELINES, OR INTO CONDUITS LEADING TO SURFACE WATERS MUST BE REPORTED TO THE EPA'S NATIONAL RESPONSE CENTER AT (800) 424-8802.

CALIFORNIA PROPOSITION 65: THIS MATERIAL IS NOT KNOWN TO CONTAIN ANY CHEMICAL SUBSTANCES WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM, AND THEREFORE, IT IS NOT SUBJECT TO REQUIREMENTS OF CALIFORNIA HEALTH & SAFETY CODE SECTION 25259.5.

NEW JERSEY RIGHT-TO-KNOW LABEL: FOR NEW JERSEY LABELING REFER TO COMPONENTS LISTED IN THE COMPOSITION SECTION.

ADDITIONAL REGULATORY REMARKS: UNDER THE FEDERAL HAZARDOUS SUBSTANCES ACT, RELATED STATUTES, AND CONSUMER PRODUCT SAFETY COMMISSION REGULATIONS, AS DEFINED BY 16 CFR 1500.14 (b)(3) AND 1500.83 (a)(13). THIS PRODUCT CONTAINS "PETROLEUM DISTILLATES" WHICH MAY REQUIRE SPECIAL LABELING IF DISTRIBUTED IN A MANNER INTENDED OR PACKAGED IN A FROM SUITABLE FOR USE IN THE HOUSEHOLD OR BY CHILDREN. PRECAUTIONARY LABEL DIALOGUE SHOULD DISPLAY THE FOLLOWING: **CONTAINS PETROLEUM DISTILLATES! MAY BE HARMFUL OR FATAL IF SWALLOWED! KEEP OUT OF THE REACH OF CHILDREN!**

UNDER SECTION 12(b) OF TSCA: BECAUSE IT MIGHT CONTAIN DETECTABLE AMOUNTS OF **1,3,5-TRIMETHYLBENZENE (MESITYLENE) (CAS NO. 108-67-8)**, THIS PRODUCT MIGHT BE SUBJECT TO US EPA'S ONE-TIME ONLY PER COUNTRY EXPORT NOTIFICATION REQUIREMENTS.

DISCLAIMER

INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE ACCURATE AT THE TIME OF PREPARATION. NO WARRANTY IS MADE CONCERNING THE ACCURACY AND NO LIABILITY SHALL BE MADE FOR CLAIMS FOR USE OR RELIANCE OF THE RECOMMENDATIONS CONTAINED HEREIN.