

PACIFIC SCIENTIFIC CO.,HTL ENERGY SYSTEMS DIV. -- 30903824, FIRE EXTINGUISHER
CARTRIDGE -- 1680-00-168-5737

===== Product Identification =====

Product ID:30903824, FIRE EXTINGUISHER CARTRIDGE

MSDS Date:02/02/1999

FSC:1680

NIIN:00-168-5737

Status Code:A

Kit Part:Y

MSDS Number: CKQTL

=== Responsible Party ===

Company Name:PACIFIC SCIENTIFIC CO.,HTL ENERGY SYSTEMS DIV.

Address:7073 WEST WILLIS DRIVE

Box:5002

City:CHANDLER

State:AZ

ZIP:85226

Country:US

Info Phone Num:602-796-1100

Emergency Phone Num:1-602-796-1100

Resp. Party Other MSDS Num.:00015

Preparer's Name:J. GEVING

Chemtrec Ind/Phone:(800)424-9300

CAGE:54181

=== Contractor Identification ===

Company Name:PACIFIC SCIENTIFIC CO.,HTL ENERGY SYSTEMS DIV.

Address:7073 WEST WILLIS DRIVE

Box:5002

City:CHANDLER

State:AZ

ZIP:85226

Country:US

Phone:602-796-1100

CAGE:54181

===== Composition/Information on Ingredients =====

Ingred Name:CYCLONITE (RDX)
CAS:121-82-4
RTECS #:XY9450000
< Wt:1.
Other REC Limits:NIOSH STEL 3MG/M3
OSHA PEL:1.5 MG/M3
ACGIH TLV:TWA 0.5 MG/M3 SKIN

Ingred Name:ZIRCONIUM
CAS:7440-67-7
RTECS #:ZH7070000
< Wt:1.
OSHA PEL:5 MG/M3
ACGIH TLV:5 MG/M3
ACGIH STEL:10 MG/M3

Ingred Name:POTASSIUM NITRATE
CAS:7757-79-1
RTECS #:TT3700000
< Wt:1.
OSHA PEL:TWA 15MG/M3 TD
ACGIH TLV:TWA 10MG/M3 RESP

Ingred Name:SILICON
CAS:7440-21-3
RTECS #:VW0400000
< Wt:.1
Other REC Limits:OSHA 5MG/M3 RESP
OSH
A PEL:15 MG/M3
ACGIH TLV:10 MG/M3

Ingred Name:BORON
CAS:7440-42-8
RTECS #:ED7350000
< Wt:.1

Ingred Name:POTASSIUM PERCHLORATE
CAS:7778-74-7
RTECS #:SC9700000
< Wt:.1

Ingred Name:IRON OXIDE RED (FE2O3)
CAS:1309-37-1
RTECS #:NO7400000
< Wt:.1
OSHA PEL:10 MG/M3
ACGIH TLV:5 MG/M3;2 PPM

Ingred Name:DIATOMACEOUS EARTH, FLUX-CALCINED
CAS:68855-54-9
< Wt:.1
OSHA PEL:TWA 0.8MG/M3
ACGIH TLV:TWA 10MG.M3 RESP

=====
===== Hazards Identification =====

arcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:THE PRODUCT IS SEALED PREVENTING EXPOSURE TO THE HAZARDOUS INGREDIENTS INSIDE. IF PRODUCT SEAL RUPTURES EXPOSING HAZARDOUS INGREDIENTS, DISCARD PRODUCT, AVOID CONTACT. EYES: MAY CAUSE EYE IRRITATION. SKIN: MAY CAUSE IRRITATION. INHALATION: EXPOSURE TO IGNITION PRODUCTS MAY CAUSE RESPIRATORY IRRITATION. INGESTION: NOT A HAZARD IN NORMAL INDUSTRIAL USE. SOME INREDIENTS ARE HIGHLY POISONOUS BY INGES TION.

Explanation of Carcinogenicity:OSHA, NTP & NIOSH:NIETHER PRODUCT NOR ANY COMPONENTS ARE LISTED. IARC: 3 -HUMAN LIMITED EVIDENCE (IRON OXIDE). AGCIH: A4 - INADEQUATE EVIDENCE (IRON OXIDE, CYCLONITE)

Effects of Overexposure:EYE IRRITATION, SKIN IRRITATION, RESPIRATORY IRRITATION.

Medical Cond Aggravated by Exposure:PRE-EXISTING PULMONARY DISEASES SUCH AS EMPHYSEMA, ASTHMA, ETC. MAY BE AGGRAVATED BY OVEREXPOSURE TO IGNITION PRODUCTS.

===== First Aid Mea
sures =====

First Aid:EYES: IF EXPOSED TO CONTAINER FRAGMENTATION, BANDAGE EYES AND TRANSPORT. IF EXPOSED TO IGNITION PRODUCTS, REMOVE CONTACT LENSES IMMEDIATELY, FLUSH WITH WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFT ING UPPER AND LOWER EYELIDS. SEEK MEDICAL ATTENTION IF NEEDED. SKIN: WASH OFF ANY RESIDE WITH SOAP AND WATER. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS. INHALATION: REMOVE TO FRESH AIR. IF BREATHI NG HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. SEEK IMMEDIATE MEDICAL ATTENTION. INGESTION: SEEK IMMEDIATE MEDICAL ATTENTION.

===== Fire Fighting Measures =====

Autoignition Temp:>204.4C, 400.F

Autoignition Temp Text:RDX

Lower Limits:SELF-OXIDIZI

Upper Limits:SELF-OXIDIZI

Extinguishing Media:PERMANENTLY-INSTALLED, AUTOMATIC WATER SPRINKLER / DELUGE SYSTEM IS RECOMMENDED.

Fire Fighting Procedures:DO NOT ATTEMPT TO MANUALLY FIGHT FIRES. I

N

CASE OF FIRE, PERSONNEL SHOULD IMMEDIATELY EVACUATE THE AREA, USING AS MUCH PROTECTIVE COVER AS POSSIBLE AND ACTIVATE DELUGE AND ALARM SYSTEMS.

Unusual Fire/Explosion Hazard:WARNING - EXPLOSIVE PRODUCT! PRODUCT MAY BE SENSITIVE TO SHOCK, IMPACT, FRICTION, ELECTROSTATIC DISCHARGE, HIGH PRESSURE OR HIGH TEMPERATURE. MUST NOT BE CONFINED IF BURNING. PRODUCT MAY DEFLAGRATE OR DETONATE IF EXPOSED RELEASING TOXIC FUMES, HEAT, SHOCK WAVES AND CONTAINER FRAGMENTS.

=====

===== Accidental Release Measures =====

Spill Release Procedures:IF PRODUCT SEAL RUPTURES, BARRICADE AREA, ELIMINATE IGNITION SOURCES, USE A SOFT BRISTLE BRUSH AND A CONDUCTIVE RUBBER PAN OR RUBBER SHOVEL TO CLEAN-UP SPILLS. USE CONDUCTIVE CONTAINERS AND GROUND ALL CONTAINERS WHEN TRANSFERRING THE SPILLED MATERIAL. LARGE SPILL: SOIL SPILL: REMOVE ALL CONTAMINATED SOIL TO DISPOSE OF AS HAZARDOUS WASTE. WATER SPILL: FLUSH WITH COPIOUS AMOUNTS OF WATER

. COLLECT WA

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:HANDLING AND USE OF EXPLOSIVES AND RELATED DANGEROUS MATERIALS MUST BE LIMITED TO PERSONNEL WHO ARE SPECIFICALLY AUTHORIZED AND TRAINED IN THIS AREA. REFER TO DOD SAFETY MANUAL DOD4145.26M.

Other Precautions:REFER TO THE DEPARTMENT OF DEFENSE (DOD) CONTACTORS SAFETY MANUAL NUMBER DOD4145.26M, INCLUDING SOURCES LISTED WITHIN, AND ANY OTHER APPROPRIATE INFORMATION FOR DETAILED INSTRUCTIONS REGARDING PROPER HANDLING, STORAGE, USE AND DISPOSAL OF EXPLOSIVES AND RELATED DANGEROUS MATERIAL.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATORY PROTECTION IS RECOMMENDED IF EXPOSED TO PARTICULATE MATTER, AND FOR PROTECTION AGAINST TOXIC GASEOUS IGNITION PRODUCTS, BUT SHOULD NOT BE NECESSARY WITH NORMAL HAND

LING.

Ventilation:EXPLOSION-PROOF ELECTRICAL IS REQUIRED, WHERE APPLICABLE.

MECHANICAL GENERAL-COVERAGE, MODERATE-FLOW IS RECOMMENDED FOR PARTICULATE & IGNITION PRODUCT REMOVAL.

Protective Gloves:IMPERVIOUS, STATIC-DISSIPATIVE GLOVES ARE RECOMMENDED

Eye Protection:INDUSTRIAL SAFETY GLASSES OR GOGGLES

Other Protective Equipment:HIGH COTTON-CONTENT CLOTHING AND

UNDERCLOTHING, AS WELL AS CONDUCTIVE SHOES OR LEGSTAT(S), WRISTAT(S) AND A STATIC-DISSIPATIVE COAT ARE RECOMMENDED TO AVOI

D

STATIC ELECTRICITY BUILD-UP.

Work Hygienic Practices:EYE WASHING CAPABILITY IS REQUIRED.

Supplemental Safety and Health

FOR HALON 1301 SEE MSDS# CKQTM. NOTE TO PHYSICIAN: SUPPORT CARE.

PRODUCT IGNITION PRODUCES SMALL QUANTITIES OF BORON, ZIRCONIUM AND IRON COMPOUNDS, PLUS NITROGEN OXIDES AND POTASSIUM CHLORIDE DUST. T

REATMENT BASED ON JUDGEMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.

===== Physical/Chemical Properties =====

HCC:E2

Decomp Temp:>204.4C, 400.F

Decomp Text:RDX

Vapor Pres:N/A, SEALED PRODUCT

Spec Gravity:>1

pH:NOT DETERMINED

Evaporation Rate & Reference:N/A, SEALED PRODUCT

Solubility in Water:NEGLIGIBLE

Appearance and Odor:SOLID, METALLIC ORDNANCE HARDWARE; ODORLESS

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

THE PRODUCT IS SEALED PREVENTING EXPOSURE TO THE HAZARDOUS INGREDIENTS INSIDE. IF THE SEAL RUPTURES, REMOVE ALL OTHER HAZARDOUS MATERIALS.

Stability Condition to Avoid:SHOCK, IMPACT, FRICTION, ELECTROSTATIC

DISCHARGE, HIGH PRESSURE, HIGH TEMPERATURE, OPEN FLAME AND CHEMICAL OR PHYSICAL CONTAMINATION.

Hazardous Decomposition Products:EXTREME HEAT AND TOXIC GASES

CONTAINING BORON, ZIRCONIUM AND IRON COMPOUNDS, PLUS NITROGEN

OXIDES AND POTASSIUM CHLORIDE DUST MAY BE EMITTED DURING IGNITION.

Conditions to Avoid Polymerization:WILL NOT OCCUR.

===== Toxicological Information =====

=====

Toxicological Information:CYCLONITE (RDX): POISON BY INGESTION AND INTIRAVENOUS ROUTES. EFFECTS CNS, LIVER AND BLOOD. LD50 ORAL RAT =100 MG/KG; LD50 (IV)RAT= 18 MG/KG. POTASSIUM NITRATE: POISONOUS BY INTRAVENOUS, MODERATELY TO XIC BY INGESTION. CHRONIC EXPOSURE CAN CAUSE ANEMIA, NEPHRITIS & METHHEMOGLOBINEMIA. EXPERIMENTAL TERATOGEN, REPRODUCTIVE EFFECTS & MUTATION REPORTED. .LD50 ORAL RABBIT=1901 MG/KG. BORON: POISON BY IN ESTION WITH REPRODUCTIVE EFFDECTS, L D50 ORAL MAMMAL= 300 MG/KG. RED IRON OXIDE: METAL FUME FEVER. ZIRCONMIUM:LUNG GRANULOMAS. SILICON: NUISANCE DUST. POT PERCHLORATE: SEVERE IRRITANT. DIATAMACEOUS EAR TH: MAY CAUSE PNEUMOCONIOSIS.

===== Ecological Information =====

Ecological:SMAL AMOUNT OFHAZARDOUS INGREDIENTS SHOULD HAVE NO ECOLOGICAL IMPACT.

===== Disposal Considerations =====

Waste Disposal Methods:EXPLOSIVE OR RELATED DANGEROUS MATERIAL SHO ULD BE DESTROYED BY OPEN BURNING/OPEN DETONATION IN AN APPROVED INCINERATOR, OR BY ANOTHER APPROVED METHOD SUCH AS CHEMICAL TREATMENT/DESTRUCTION. CONTAMINAT ED PROPERTY MUST NOT BE BURNED. RCRA HAZ WASTW CODE: D003 (REACTIVE)

===== MSDS Transport Information =====

Transport Information:PSN: CARTRIDGE, POWER DEVICE, 1.4S, UN0323, II. LABEL: EXPLOSIVE 1.4S. DOT RQ= 100 LBS(45.4 KG).

===== Regulatory Information =====

=====

SARA Title III Information:CERCLA RQ= 100 LBS (45.4 KG), D003 REACTIVITY. SARA SEC 302 TPQ: NOT AN EXTREMELY HAZARDOUS SUBSTANCE. SEC 304 RQ: SEE CERCLA RQ. SEC 313: NOT REGULATED.

Federal Regulatory Information:OSHA: REGULATED UNDER 29CFR 1910.1200. TSCA: ALL HAZARDOUS COMPONETS ARE REPORTED ON THE INVENTORY.

State Regulatory Information:CA PROP 65: NEITHER THE PRODUCT NOR ITS COMPONENTS ARE ON THE LIST. NEW JERSEY AND PENNSYLVANIA RIGHT TO KNOW: THE PRODUCT (EXPL

OSIVE C) AND ITS CMPONENTS ARE ON THE HAZ
SUBSTANS LIST.

===== Other Information =====

Disclaimer (provided with this information by the compiling agencies):
This information is formulated for use by elements of the Department
of Defense. The United States of America in no manner whatsoever,
expressly or implied, warrants this information to be accurate and
disclaims all liability for its use. Any person utilizing this
document should seek comp
etent professional advice to verify and
assume responsibility for the suitability of this information to their
particular situation.