SAFETY DATA SHEET

Revision date: 27-Apr-2022

Revision Number 2

Section 1: Identification

Product identifier

Product Name i-kon (TM) III (1.1B)

Product Code(s) 000000009467

Other means of identification

Proper shipping name DETONATORS, ELECTRIC

UN number or ID number 0030

Synonyms i-kon III RX, i-kon III SNS, i-kon III TX, i-kon III X-414, i-kon III XT, i-kon III Extreme, i-kon III Starter Detonator

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Electronic detonator. Restricted to professional users.

Uses advised against No information available.

Details of manufacturer or importer

Supplier
Orica Australia Pty Ltd
ABN: 99 004 117 828
1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9665 7111
Facsimile: +61 3 9665 7937

Emergency telephone number

Emergency telephone number **AUSTRALIA: 1 800 033 111 (ALL HOURS)**
INTERNATIONAL AUSTRALIA: +61 3 9663 2130 (ALL HOURS)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

Section 2: Hazard identification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).
Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

GHS Classification

Explosives	Division 1.1

Label elements

Signal word
DANGER

Hazard statements
H201 - Explosive; mass explosion hazard

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep only in original packaging.
Ground and bond container and receiving equipment.
Do not subject to grinding/shock/friction.
Wear protective gloves/clothing and eye/face protection.
In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.
Precautionary Statements - Storage
Store in accordance with:.
AS2187 in a well ventilated magazine..

Other hazards which do not result in classification

Section 3: Composition and information on ingredients

Chemical name	CAS No.	Weight-%
Pentaerythritol tetranitrate (PETN)	78-11-5	<1%
Lead chromate	7758-97-6	<0.1%
Lead azide	13424-46-9	<0.1%
Metal and plastic components and other non-hazardous components	-	>=90%

Additional information
Metal alloy tube closed at one end with a moulded plastic plug and attached electric lead wires at the opposite end. The detonator of the i-kon SNS assembly is housed in a plastic connected block.

Section 4: First aid measures

Description of first aid measures

General advice
For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Take a copy of the Safety Data Sheet when going for medical treatment.

Inhalation
In case of inhalation of blasting fumes:. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. (Call a physician if symptoms occur). Remove to fresh air and keep at rest in a position comfortable for breathing.

Eye contact
Not an expected route of exposure.

Skin contact
Not an expected route of exposure. If skin irritation or rash occurs: Get medical advice/attention.

Ingestion Get immediate medical attention.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms None known.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically. Detonator assemblies are explosive - handle with care. Shrapnel from detonation may cause burns, wounds and bruises. Explosive material containing lead. Long term exposure to detonation fumes may result in lead poisoning.

Section 5: Firefighting measures

Suitable Extinguishing Media

Suitable extinguishing media Do not fight fires involving explosives.

Unsuitable extinguishing media

Specific hazards arising from the chemical

Specific hazards arising from the chemical Explosive. May be ignited by heat, sparks or flames. Avoid stray currents. Risk of explosion by shock or heating under confinement. May explode from friction, heat or contamination.

Hazardous combustion products Carbon oxides. Nitrogen oxides. Metal oxides. Lead oxides. Lead fume.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters In the case of a small fire, if actual explosive is not burning, carefully remove as much explosive as possible to a safe distance. However, if explosive is burning, evacuate area immediately and allow to burn. DO NOT fight fire. A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion. Mass explosion hazard.

Hazchem code E

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not subject to grinding/shock/friction. Use personal protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

In the case of a transport accident notify the Police, Regulatory Authorities and Orica Australia Pty Ltd (Telephone: 1800 033 111 -- 24 hour service) and/or Orica New Zealand Ltd (Telephone: 0800 734 607 -- 24 hour service) or Orica International (Telephone: +61 3 9663 2130 -- 24 hour service Australia).

For emergency responders Explosive material. Remove all sources of ignition. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Keep out of waterways.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Handle with care. Use non-sparking tools. Ground and bond containers when transferring material. Pick up and transfer to properly labeled containers. Avoid contamination with other substances. Keep in suitable, closed containers for disposal. Use non-sparking tools.

Section 7: Handling and storage

Precautions for safe handling

Advice on safe handling Handle with care. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. KEEP OUT OF REACH OF CHILDREN AND PETS. Take precautionary measures against static discharges. Do not allow radio transmitters near electric detonators. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating.

General hygiene considerations Wash hands before breaks and after work. When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store material in a well ventilated magazine suitably licensed for the explosives hazard classification. Do not store with other explosives products that have an incompatible explosives hazard classification (for example detonators must not be stored with blasting/high explosives). Store in accordance with the particular national regulations. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Store away from other materials. Protect from physical damage. Keep/store only in original container. Protect from moisture. Store away from incompatible materials described in Section 10.

Incompatible materials Combustible material. Incompatible with oxidizing agents. Strong acids.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical name	Australia	New Zealand	ACGIH TLV
Lead chromate 7758-97-6	TWA: 0.05 mg/m³	TWA: 0.00002 mg/m³ TWA: 0.05 mg/m³ STEL: 0.0005 mg/m³	TWA: 0.0002 mg/m³ Cr(VI) inhalable particulate matter STEL: 0.0005 mg/m³ Cr(VI) inhalable particulate matter dermal sensitizer;respiratory sensitizer
Lead azide 13424-46-9	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³ Pb

Chemical name	European Union	United Kingdom	Germany DFG
Lead chromate 7758-97-6	TWA: 0.005 mg/m³ TWA: 0.010 mg/m³ TWA: 0.025 mg/m³ TWA: 0.15 mg/m³	TWA: 0.01 mg/m³ TWA: 0.025 mg/m³ TWA: 0.15 mg/m³ STEL: 0.03 mg/m³ STEL: 0.065 mg/m³ STEL: 0.45 mg/m³ Sen+	TWA: 0.004 mg/m³ Peak: 0.032 mg/m³ Sk*
Lead azide 13424-46-9	TWA: 0.15 mg/m³	TWA: 0.15 mg/m³ STEL: 0.45 mg/m³	TWA: 0.004 mg/m³ Peak: 0.032 mg/m³

Chemical name	Australia	ACGIH	European Union
Lead chromate 7758-97-6	-	200 µg/L	-
Lead azide 13424-46-9	-	200 µg/L	-

Lead, inorganic dusts & fumes (as Pb): 8hr TWA = 0.05 mg/m³
Lead chromate (as Cr): 8hr TWA = 0.05 mg/m³, Carcinogen Category 1B

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

Carcinogen Category 1B - presumed human carcinogen. There is sufficient evidence to provide a strong presumption that human exposure may result in the development of cancer. This evidence is generally based on appropriate long term animal studies, limited epidemiological evidence or other relevant information.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements. Apply technical measures to comply with occupational exposure limits.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin and body protection	Overalls. Protective shoes or boots.
Hand protection	Protective gloves.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	No information available.
Thermal hazards	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Article.
Color	Metallic
Odor	Odourless
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	Explosive; mass explosion hazard

Section 10: Stability and reactivity

Reactivity

Reactivity	Explosive.

Chemical stability

Stability	Risk of explosion by shock, friction, fire or other sources of ignition. Heating, particularly under confinement, may cause an explosion. Detonation may occur from static electricity

discharge or mechanical/heavy impact, particularly under confinement.

Explosion data
Sensitivity to mechanical impact Yes.
Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions Explosion may result due to shock, friction, fire or other sources of ignition. Detonation may occur from heavy impact or excessive heating. A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion. Mass explosion hazard. Explosion creates the potential for shrapnel.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat. Keep away from open flames, hot surfaces and sources of ignition. static discharge (electrostatic discharge). Do not subject to grinding/shock/friction. Do not subject to shock. Contact with other chemicals. Protect from moisture. Avoid exposure to radio transmitters (including mobile phones).

Incompatible materials

Incompatible materials Combustible material. Incompatible with oxidizing agents. Strong acids.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Nitrogen oxides. Metal oxides. Lead oxides. Lead fume.

Section 11: Toxicological information

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Not an expected route of exposure. Initiation can cause the presence of lead fume in air. Test firing of detonators in poorly ventilated areas can cause presence of lead fume in air. Lead fumes may be irritant to mucous membranes and respiratory tract. Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Eye contact Not expected to cause eye irritation.

Skin contact Refer to manufacturer/supplier for information on disposal/recovery/recycling. Not expected to cause skin irritation. May cause skin irritation and/or dermatitis. Will have a degreasing action on the skin.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms None known.

Acute toxicity .

Numerical measures of toxicity - Product Information
No information available

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Pentaerythritol tetranitrate (PETN)	= 1660 mg/kg (Rat)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The DMSO extract by IP 346 of the oil is less than 3%; consequently it is not classified as a carcinogen. Classification is based on mixture calculation methods based on component data.

Chemical name	Australia	European Union	IARC
Pentaerythritol tetranitrate (PETN) - 78-11-5	-	-	Group 2A
Lead chromate - 7758-97-6	Carc. 1B	Carc. 1B	Group 1
Lead azide - 13424-46-9	-	-	Group 2A

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard Not classified.

Chronic effects: Long term exposure to low concentrations of lead (by any route) may result in blood effects, anaemia, central and peripheral nervous system damage, gastrointestinal disturbances, renal injury, foetotoxicity, developmental deficiencies in neonates and children, and testicular damage including decreased sperm count.
Exposure to explosive charge material unlikely. The main hazard is the possibility of exposure to lead fumes when test firing detonators in a poorly ventilated area. The effects of lead poisoning may not be appartent immediately but significant absorption over a period of time may produce adverse effects as noted earlier due to accumulation of lead in the body.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Keep out of waterways. May cause long-term adverse effects in the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea

Pentaerythritol tetranitrate (PETN)	-	LC50: =926mg/L (96h, Pimephales promelas)	-	-

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Pentaerythritol tetranitrate (PETN)	2.04

Mobility

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Small quantities of damaged or deteriorated explosives may be destroyed by inclusion in a blast hole containing good explosive (s). For large quantities of damaged or deteriorated explosives notify Orica Australia Pty Ltd and/or Orica New Zealand Pty Ltd. Dispose of product in packaging/container in a way that is consistent with the Hazardous Substances (Disposal) Notice 2017 and the Act, and Hazardous Substances (Amendments and Revocations) Notice 2020. Treat the chemical using a method that changes the characteristics or composition of the chemical so that the chemical is no longer a hazardous chemical; or export the chemical from New Zealand as waste.

Contaminated packaging Do not reuse empty containers.

See section 8 for more information

Section 14: Transport information

ADG Not regulated
UN number or ID number 0030
Proper shipping name DETONATORS, ELECTRIC
Transport hazard class(es) 1.1B
Hazchem code E

IATA Forbidden

IMDG Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	0030
UN proper shipping name	DETONATORS, ELECTRIC
Transport hazard class(es)	1.1B
IMDG EMS Fire	F-B
IMDG EMS Spill	S-X

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).
Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).
See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
No poisons schedule number allocated

Australian Industrial Chemicals Introduction Scheme (AICIS)
Contact supplier for inventory compliance status

Chemical name	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Pentaerythritol tetranitrate (PETN) - 78-11-5	Present	-
Lead chromate - 7758-97-6	Present	Conditions of introduction or use: Must not be imported or manufactured for use in any industrial surface coating or as a component of industrial surface coatings at concentrations >0.1%. Must not be imported or manufactured for use in any ink or as a component of inks at concentrations >0.1%, when intended for industrial uses.;Specific information requirement: Obligations to provide information apply. You must tell us within 28 days if the circumstances of your importation or manufacture (introduction) are different to those in our assessment.
Lead azide - 13424-46-9	Present	-

Illicit Drug Precursors/Reagents
This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemical name	National pollutant inventory
Lead chromate - 7758-97-6	10 tonne/yr Threshold category 1 2000 tonne/yr Threshold category 2b 60000 MWH Threshold category 2b 20 MW Threshold category 2b
Lead azide - 13424-46-9	10 tonne/yr Threshold category 1 2000 tonne/yr Threshold category 2b

	60000 MWH Threshold category 2b 20 MW Threshold category 2b

International Inventories

AIIC	All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.
NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.

Legend:
AIIC- Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Other information

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Prepared By This Safety Data Sheet has been prepared by IXOM Operations Pty Ltd (Toxicology and SDS Services).

Revision date: 27-Apr-2022

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend
SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Disclaimer
This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since The Supplier cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Supplier representative or The Supplier at the contact details on page 1.

The Supplier's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet