



Section 1 - Identification of the Material and Supplier

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Chemical nature: Blend of ingredients including lead monoxide, sodium carbonate, sodium tetraborate and other ingredients.

Trade Name: **Assay Flux – F104**

Product Use: Used in laboratory analysis of minerals for gold.

Creation Date: **April, 2016**

This version issued: **April, 2016** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xi, Irritating. T, Toxic. Hazardous according to the criteria of SWA.
Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

SUSMP Classification: S6

ADG Classification: Class 6.1: Toxic Substances.

UN Number: 2291, LEAD COMPOUND, SOLUBLE, N.O.S. (Lead monoxide).



GHS Signal word: DANGER

Acute Toxicity Oral Category 3
Acute Toxicity Dermal Category 4
Skin Corrosion /Irritation Category 2
Serious eye damage/eye irritation Category 1
Acute Toxicity Inhalation Category 4
Specific Target Organ Toxicity - Single Exposure Category 3
Germ cell mutagenicity Category 2
Carcinogenicity Category 2
Reproductive Toxicity Category 1
Specific Target Organ toxicity - single exposure Category 2
Specific Target Organ toxicity - repeated exposure Category 2
Hazardous to aquatic environment Short term/Acute Category 2

HAZARD STATEMENT:

H301: Toxic if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H341: Suspected of causing genetic defects.
H351: Suspected of causing cancer.
H360: May damage fertility or the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.
H401: Toxic to aquatic life.

PREVENTION

P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.

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- P260: Do not breathe dusts.
- P262: Do not get in eyes, on skin, or on clothing.
- P264: Wash contacted areas thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well ventilated area.
- P273: Avoid release to the environment.
- P280: Wear protective gloves, protective clothing and eye or face protection.
- P281: Use personal protective equipment as required.

RESPONSE

- P314: Get medical advice or attention if you feel unwell.
- P362: Take off contaminated clothing and wash before reuse.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P332+P313: If skin irritation occurs: Get medical advice.
- P337+P313: If eye irritation persists: Get medical advice.
- P370+P378: Not combustible. Use extinguishing media suited to burning materials. Water fog or fine spray is the preferred medium for large fires.

STORAGE

- P405: Store locked up.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL

- P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Fine tan-yellow powder.

Odour: Mild odour of diesel fuel.

Major Health Hazards: toxic if swallowed, danger of cumulative effects, limited evidence of a carcinogenic effect, may cause serious damage to eyes, may impair fertility, may cause harm to unborn children. This product is a cumulative poison. Minor exposures over a period of time may lead to serious health problems.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Sodium carbonate	497-19-8	20-60	not set	not set
Lead monoxide	1317-36-8	20-70	0.15	not set
Disodium tetraborate, anhydrous	1330-43-4	5-30	1	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If irritation occurs, contact a Poisons Information Centre, or call a doctor. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. In severe cases, symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

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Skin Contact: Quickly and gently brush away excess particles. Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

No fire decomposition products are expected from this product at temperatures normally achieved in a fire.

Extinguishing Media: Not combustible. Use extinguishing media suited to burning materials. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point: Does not burn.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Not applicable - does not burn.

Flammability Class: Does not burn.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC, Viton. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask.

Stop leak if safe to do so, and contain spill. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10. Take special care if handling this product over extended periods as it is a cumulative poison.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

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Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: **AS/NZS 4501** set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
disodium tetraborate, anhydrous	1	not set
Lead monoxide	0.15	not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, Viton.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask.

Eyebaths or eyewash stations and safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

After removal of overalls, hands and face should be thoroughly washed using soap and water. The use of a nailbrush is recommended to clean thoroughly. A barrier cream can be applied to exposed skin to reduce itchiness. Do not eat, drink or smoke in any workroom where lead products are being handled. Wash hands before eating, drinking or smoking. Regular cleaning of masks and clothing is essential

By law, you must provide and pay for a worker's health monitoring, both before lead risk work begins and one month afterwards. The monitoring must be carried out by or under the supervision of a registered medical practitioner with relevant experience.

A worker must be removed from the lead risk work and SafeWork must be notified when:

- a worker's test results are over the prescribed blood lead levels
- test results suggest that the worker may have contracted a disease, injury or illness from working with lead
- risk control measures have failed and corrective measures need to be taken - including if the worker can continue to carry out the work (as advised by a medical practitioner in the health monitoring report).

You must also ensure a medical examination of the worker within seven days of removing them from the work.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Fine tan-yellow powder.
Odour:	Mild odour of diesel fuel.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Solid at normal temperatures.
Volatiles:	Nil at 100°C.
Vapour Pressure:	Nil at normal ambient temperatures.
Vapour Density:	Not applicable.
Specific Gravity:	No data.
Water Solubility:	Some, but not all ingredients are soluble.
pH:	No data.
Volatility:	Nil at normal ambient temperatures.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.

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Coeff Oil/water Distribution: No data
Viscosity: Not applicable.
Autoignition temp: Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep isolated from combustible materials.
Incompatibilities: acids, alkali hydroxides.
Fire Decomposition: No significant quantities of decomposition products are expected at temperatures normally achieved in a fire. Sodium, lead, boron compounds.
Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:
Target Organs: There is no data to hand indicating any particular target organs.

This product may cause heritable genetic damage. Women who are pregnant or who are likely to become pregnant in the near future should avoid using this product.

Disodium Tetraborate, Anhydrous is a SWA Class 2 Reproductive risk, may impair fertility.
This product is likely to cause decreased fertility in humans.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Sodium Carbonate	Conc>=20%: Xi; R41; R37
<ul style="list-style-type: none">Eye damage - category 1Specific target organ toxicity (single exposure) - category 3	
Lead Monoxide	Conc>=5%: T; R40; R61; R62; R68; R33
<ul style="list-style-type: none">Carcinogenicity - category 2Germ cell mutagenicity - category 2Specific target organ toxicity (repeated exposure) - category 2Reproductive toxicity - category 1A	
Disodium Tetraborate, Anhydrous	Conc>=4.5%: T; R60; R61
<ul style="list-style-type: none">Reproductive toxicity - category 1B	

Lead exposure has been associated with increased risk of lung, stomach, and bladder cancer in diverse human populations. In studies of humans occupationally exposed to lead, there is evidence to suggest that lead damages chromosomes or DNA. In most studies, lead caused micronucleus formation, chromosomal aberrations, and DNA damage, but studies on sister chromatid exchange gave conflicting results. Genetic studies on humans environmentally exposed to lead also gave conflicting results. Lead did not cause mutations in bacteria, and results from test systems using mammalian cells were conflicting. A report may be found at <http://ntp.niehs.nih.gov/ntp/roc/eleventh/profiles/s101lead.pdf>

Potential Health Effects

Inhalation:

Short Term Exposure: This product is an inhalation irritant. Symptoms may include headache, irritation of nose and throat and increased secretion of mucous in the nose and throat. Other symptoms may also become evident, but they should disappear after exposure has ceased if treatment is prompt.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: This product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but if treated promptly, all should disappear once exposure has ceased.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

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Short Term Exposure: This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is toxic, but further symptoms are not available. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term Exposure: Long term minor exposures to this product may cause serious health effects.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Toxic to aquatic life.

For lead compounds – toxic to aquatic organisms (calc. Lead): fish lethal from 1.4mg/L

S. gairdnerii: LC₅₀: 0.14mg/L/96h

arthropod magna LC₅₀: 2.5mg/L

bacteria :Ps. Putida toxic from 1.8mg/L up

algae: Sc. Quadric from 3.7mg/L up hazard in drinking water

Section 13 - Disposal Considerations

Disposal: This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, we suggest that you contact a specialist disposal company to arrange disposal. Disposal by untrained personnel may cause a dangerous incident.

Section 14 - Transport Information

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

UN Number: 2291, LEAD COMPOUND, SOLUBLE, N.O.S. (Lead monoxide).

Hazchem Code: 2Z

Special Provisions: 199

Limited quantities: ADG 7 specifies a Limited Quantity value of 5 kg for this class of product.

Dangerous Goods Class: Class 6.1: Toxic Substances.

Packing Group: III

Packing Instruction: P002, IBC08, LP02

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredient: Sodium carbonate, is mentioned in the SUSMP.

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Issued by: Western Refractories Pty Ltd

Phone: +61 8 9359 2233 (office hours)

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)



Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)
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