

Safety Data Sheet

1. Identification of Substance and of the Company

Company: NSC CO., LTD. SINGAPORE BRANCH
Registered Office: 8 Shenton Way, #16-03, Singapore 06881
Manufacturing Factory: 76 Tuas South Street 5, Singapore 63780
Contacts: Tel) +65-6224-0190, Fax) +65-6224-0132

Trade names/Synonyms: Passivation agent, AD PASSIVE S

Chemical Family: Inorganic Acid

HS Code: 3810-10-000

Creation Date: 25th June 2005

Revision Date: 9th August 2008

2. Composition/Information on Ingredients

Component: Nitric Acid

CAS No.: 7697-37-2

Percentage: 20-40%

Hazardous: Yes

Component: Water & Additive:

CAS No.: 7732-18-5

Percentage: 60-80%

Hazardous: No

3. Hazard Identification

Emergency Overview

POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE. CORROSIVE LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

Health Rating: 3- Severe (Poison)

Flammability Rating: 0- Non

Reactivity Rating: 3- Severe (Oxidizer)

Contact Rating: 4- Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD
PROPER GLOVES

Storage color Code: Yellow (Reactive)

Potential Health Effects

AD PASSIVE S is extremely hazardous: it's corrosive, reactive, an oxidizer, and a poison

Inhalation: Corrosive! Inhalation of vapors can breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory.

Ingestion:

Corrosive! Swallowing AD PASSIVE S can immediate pain and burn of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact:

Corrosive ! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.

Eye Contact:

Corrosive ! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure:

Long-term exposures to concentrated vapors may cause erosion of teeth and lung damage
Long-term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions

Person with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

4. First-Aid Measures

Immediate first aid treatment reduce the health effects of this substance

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

DO NOT INDUCE VOMITING ! Give large quantities of the water or milk if available
Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of the water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable

Explosion:

Reacts explosively with combustible organic or readily oxidizable materials such as alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc. Reacts with most metals to release hydrogen gas which can form explosive mixtures with air.

Fire Extinguishing Media

Water spray may be used to keep fire exposed containers cool. Do not get water inside

Special Information

Increases the flammability of combustible, organic and readily oxidizable, material. In the event of the fire, wear full protection 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. 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. Neutralize with alkaline material (soda ash, lime), then 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!

7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. 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)

2ppm(TWA),4ppm(STEL)

ACGIH Threshold Limit Value (TLV)

2ppm(TWA);4ppm(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, wear a supplied air, full-facepiece respirator, air-lined hood or full-facepiece self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, appropriate, to prevent skin contact.

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

Colour: Transparent
Boiling Point: 98.5°C
Melting Point: No information found
Vapor Pressure: No information found
Vapor Density: No information found
Specific Gravity: 1.2
Water Solubility: Soluble
Odour Threshold: Suffocating, acrid
Evaporation Rate: No information found

*Physical and chemical properties of individual components:

【Nitric Acid: 50-70%】

Appearance: Colorless to yellowish liquid
Boiling Point: 122°C(252°F)
Melting Point: -42°C(-44°F)
Vapor Pressure (mm Hg): 48 @ 20°C(68°F)
Vapor Density (Air=1): 2-3
Specific Gravity: 1.41
Water Solubility: Infinitely soluble
Odour Threshold: Suffocating, acrid
Evaporation Rate (BuAc=1): No information found
pH: 1.0 (0.1M solution)
% Volatiles by volume @ 21°C(70°F): 100 (as water and acid)

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products:

When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes.

Hazardous Polymerization:

Will not occur

Incompatibilities:

A dangerously powerful oxidizing agent, concentrated nitric acid is incompatible with many substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, and combustible organics

Conditions to Avoid:

Light and heat.

11. Toxicological Information

Nitric acid:

Inhalation rat LC50:244ppm(NO2)/30M;Investigated as a mutagen, reproductiv
effector.Oral(human)LDLo:430mg/kg

Cancer Lists

Ingredient: Nitric Acid (7697-37-2)

Known: No

NTP Carcinogen-Anticipated: No

LARC Category: None

Ingredient: Water (7732-18-5)

Known: No

NTP Carcinogen-Anticipated: No

LARC Category: None

12. Ecological Information

Environmental Fate:

No information found

Environmental Toxicity:

No information found

13. Disposal Consideration

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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

Any transportation practice must be in compliance with local, state or federal laws and regulations. (Contact local or state transportation agency for specific rules.)

UN No.: 2031

15. Regulatory Information (not meant to be all inclusive)

Follow all local regulations

16. Other Information

Reference:

NFPA Ratings: Health: 3 Flammability : 0 Reactivity : 0 Other : Oxidize

Label Hazard Warning : POISON ! DANGER ! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

Label Precautions : Do not get in eyes, on skin, or on clothing

Do not breathe vapor or mist

Use only with adequate ventilation

Wash thoroughly after handling

Keep from contact with clothing and other combustible

Do not store near combustible materials

Store in a tightly closed container

Remove and wash contaminated clothing promptly

Label First Aid : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water.

Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.

Disclaimers:

This information is given in good faith, but no warranty express or implied, is made, for the determination of suitability of the user. All material may present unknown hazards and should be used in caution. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist.