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CHEMICAL PRODUCT SAFETY INFORMATION RECORD

Product: **NATIONAL THERMIT LIGHTER**

Product Code: **AC 01101-01**

FISPQ date: **12/27/2012**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **NATIONAL THERMIT LIGHTER**

Marketed by: **THERMIT DO BRASIL INDÚSTRIA E COMÉRCIO LTDA**

Rua Sargento Sílvio Hollenbach, 601, Barros Filho - Rio de Janeiro - RJ

Zip Code: 21530 - 200

Phone: (21) 2472-4905 – Fax.: (21)2472-4901

EMERGENCY PHONES:

FIRE BRIGADE: 193

ABIQUIM: 0800 11 8270

2. HAZARDS IDENTIFICATION

2.1 Classification of hazards to human health

Acute Toxicity ((Oral, Dermal or Inhalation):



- Warning word: Attention
- Hazard phrase: May be harmful if swallowed, in contact with skin or inhaled
- Precaution phrase: Prevention:



- Wash your hands thoroughly after handling
- Do not eat, drink or smoke while using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Precaution phrase: Answer to emergency:
IN CASE OF SWALLOWED: If you feel ailment, contact a TOXICOLOGICAL INFORMATION CENTER/PHYSICIAN
Rinse your mouth
IN CASE OF SKIN CONTACT: Wash with water and soap abundantly
Remove all contaminated clothing and wash it before wearing it again
IN CASE OF INHALATION: Remove the person to a ventilated place and keep at rest in a position comfortable for breathing
Precaution phrase: Disposal: Dispose the content/container in an industrial landfill, complying with all state and local environmental regulations.

Skin corrosion/irritation:



- Warning word: Attention
- Hazard phrase: Causes moderate skin irritation
- Precaution phrase: Prevention:
Wash carefully the body parts affected after handling
Wear protective gloves/protective clothing/eye protection/face protection
- Precaution phrase: Answer to emergency:
IN CASE OF SKIN CONTACT: Wash with water and soap abundantly
In case of skin irritation: Consult a physician
Remove all contaminated clothing and wash it before wearing it again

Eye injuries:



- Warning word: Attention
- Hazard phrase: Causes serious eye irritation
- Precaution phrase: Prevention:
Wash carefully the body parts affected after handling
Wear protective gloves/protective clothing/eye protection/face protection
- Precaution phrase: Answer to emergency:
IN CASE OF EYE CONTACT: Rinse thoroughly with water for several minutes. In the case of wearing contact lenses, remove it, if easy, Continue rinsing
If the eye irritation persists: Consult a physician

Respiratory sensibility:



- Warning word: Hazard
- Hazard phrase: When inhaled may cause allergic symptoms, of asthma or airway impairment
- Precaution phrase: Prevention:
Avoid inhaling dusts/fumes/gases/mist/vapors/sprays
In case of inadequate ventilation: Use respiratory protective equipment
- Precaution phrase: Answer to emergency:
IN CASE OF INHALATION: Remove the person to a ventilated place and keep at rest in a position comfortable for breathing
In case of respiratory symptoms: Contact a TOXICOLOGICAL INFORMATION CENTER/PHYSICIAN
- Precaution phrase: Disposal: Dispose the content/container in an industrial landfill

Skin sensibility:



- Warning word: Attention
- Hazard phrase: May cause allergic skin reactions
- Precaution phrase: Prevention: Avoid inhaling dusts/fumes/gases/mist/vapors/sprays
- Precaution phrase: Answer to emergency: prevention: IN CASE OF SKIN CONTACT:
Wash with water and soap abundantly
- Precaution phrase: Disposal: Dispose the content/container in an industrial landfill

Germ cell mutagenicity: Not classified

Carcinogenici



- Warning word: Attention
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- Hazard phrase: Suspected of causing silicosis. Vulnerable organ: Lung
- Precaution phrase: Prevention:
Obtain specific information before use



Do not handle the product before you read and understand all safety precautions.
Wear protective gloves/pants and long-sleeved shirts/eye protection/face protection (mask with filter for particulate material)

- Precaution phrase: Answer to emergencies: IN CASE OF EXPOSURE OR SUSPICION OF EXPOSURE: Consult a physician
- Precaution phrase: Storage: Store in a closed area with key
- Precaution phrase: Disposal: Dispose the content/container in an industrial landfill

Toxicity to reproduction and lactation: Not classified

Aspiration hazard:



- Warning word: Attention
- Hazard phrase: May be harmful if swallowed and it penetrates the airways
- Precaution phrase: Answer to emergency:
IN CASE OF SWALLOWED: Immediately contact a TOXICOLOGICAL INFORMATION CENTER/PHYSICIAN
DO NOT induce vomiting
- Precaution phrase: Storage: Store in a closed area with key
- Precaution phrase: Disposal: Dispose the content/container in an industrial landfill

2.2 Classification of hazards to the aquatic environment: water soluble mixture, harmful to water courses and lakes.

- Precaution phrase; Prevention: Avoid release to the environment
- Hazard phrase: Harmful to aquatic organisms
- Precaution phrase: Disposal: Dispose the content/container in an industrial landfill

2.3 Evaluation of physical hazards: Division 1.4: Items which present no significant risk of explosion. Present little hazard in the event of ignition or initiation. An external fire should not cause an explosion immediately.

3. COMPOSITION AND INGREDIENTS INFORMATION

Product Characteristic: SUBSTANCE MIXTURE

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PRODUCT	CHEMICAL OR GENERIC NAME	CAS REGISTRY
Aluminum in powder or thin pieces	Atomized aluminum MSB	7429-90-5
Barium Nitrate	Barium nitrate	10022-31-8



Glue Dextrosan in powder	Glue Dextril/Glue Dextran	9004-53-9
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Chemical formula: Aluminum in powder, glue Dextril/Dextran and barium nitrate.

Chemical Characterization: Prepared with thin divided solids, transformed into compact solid.

Chemical Nature: Mixture of powders generating solid fuel

Ingredients that contribute to the danger: Barium nitrate and aluminum in powder.

Classification and hazard labeling:

Lamellar aluminum: ONU number: 1309, risk class 4.1, risk number 40, package III, flammable solid.

Barium nitrate: ONU number: 1446, risk class 5.1, risk number 56, package II, oxidizing substance.

Tolerance Limit: Brazil - Regulatory Norm No.15 - There is no exposure tolerance limit established. Product not classified.

4. FIRST AID MEASURES

Inhalation: Depart the source of contamination or move the victim to a ventilated area. If breathing is difficult, administer oxygen. Cardiopulmonary resuscitation maneuvers can be applied by trained personnel if the victim does not show vital signs. **DO NOT USE THE MOUTH TO MOUTH BREATHING METHOD.** Introduce artificial respiration with a pocket mask equipped with a one-way valve or other proper respiratory equipment. Keep the patient warm and do not allow the victim to move unnecessarily. Transport the victim to a hospital **IMMEDIATELY.**

Skin contact: Wash the skin with water (or water and non abrasive soap) gently, for at least 20 minutes or until the substance has been removed. **DO NOT STOP THE RINSE.** Under running water (emergency shower) remove clothing, shoes and other contaminated personal accessories (belts, jewelry etc.). Discard the contaminated clothing and accessories or decontaminate before reuse. If the irritation persists when repeating the rinse, request medical assistance **QUICKLY.**

Eye contact: Do not allow the victims to rub their eyes. Remove the substance excess on the eyes quickly and carefully. Remove contact lenses when appropriate. Wash the contaminated eye(s) with water letting it flow for at least 20 minutes or until the substance has been removed by keeping the eyelids apart during the irrigation. Be careful to not introduce contaminated water into the unaffected eye or face. If the irritation persists, repeat the rinsing. If occurs pain, swelling, lacrimation, photophobia or burns, the victim should be sent **QUICKLY** to an ophthalmologist.



Ingestion: DO NOT induce vomiting, call a physician immediately.

Actions that must be avoided: Contact with the victim without the use of appropriated protections. Put in risk the life of the rescuer and the victim whenever perform the removal for specialized care.

Protection for the rescuer: Complete protective clothing and individual protective equipment. Use disposable surgical gloves for contact with the victim.

Notes to the physician: Indicate the victim status and the level of exposure to the product. In case of recent ingestion of large quantities, could be performed gastric emptying procedures, such as gastric washes.

Additional Information: In all cases the medical service should be added for complete treatment, observation and support after first aid. Remove any worker who presents allergic reactions to the agent coming from the prolonged contact. Consult a specialist before any worker returns to work in areas where there is exposure to similar material. Contact lenses constitutes a particular risk, so do not use contact lenses in any area.

Gelatinous lenses may absorb irritant substances and all other types of lenses concentrate those substances.

Particles can adhere to the lens and cause damage to the cornea.

5. FIREFIGHTING MEASURES

Strong oxidant and flammable. In contact with water releases highly flammable gases. Should be avoid its storage with flammable and oxidant substances. Under heat or fire, cover carefully, avoiding agitation of the material.

Extinction media: The barium nitrate is not flammable, but the aluminum powder is extremely flammable. If fire occurs, fight the fire with protection powder

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against metal fires. Suppress with dry sand or cement. Must not be used: water, CO₂ or suppressing foams. If possible and safe, remove containers exposed to flames. Fight the fire with the wind at your back. Leave the area if there is discoloration of tanks or increasing of the flame. Stay away of tanks involved in flames.

Specific hazards of the substance or mixture: Flammable. In contact with water releases highly flammable gases.

Special methods: Evacuate the area, keep people out of the wind direction. Fight the fire from a safe distance.



Protective measure of the firefighting team: Wear protective clothing. If there is potential for exposure to steam or decomposition products, use respiratory protective equipment, regardless approved by NIOSH.

Remove all sources of ignition, keep people away and avoid exposure to sparks, fires, hot or metal surfaces heated. For removal of the material use non-sparking tools and transfer the spilled material into a suitable container, closed, labeled and stored in a place with good ventilation and safe.

6. CONTROL MEASURES FOR SPILLS AND LEAKS

Avoid the exposure of ignition, sparks and hot metallic surfaces sources. In case of leakage: transfer the material to a suitable container, closed and labeled. In the case of disposal of the material in an industrial landfill: environmental laws must be respected.

Personal precautions: Keep unnecessary people away from the spill.

Removal of ignition sources: Cut or remove the sources of ignition and heat.

Dust control: Avoid procedures that cause dust lifting.

Prevention of inhalation, skin, eyes and mucous contact: Wear personal protective equipment.

Contact prevention: Avoid contact with eyes, skin and mucous. Do not inhale the dust. The product forms a slippery layer with water: care to avoid falls.

Precautions for the environment: Contain the spill with earth dikes or non-flammable absorbent material to minimize the contaminated area; prevent

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spillage of the product in sewers and waterways; if necessary, notify local authorities.

Methods for removal and cleaning: Recuperation: Collect the spilled material by sweeping and repackage it in suitable containers, in a ventilated area for future disposal in accordance with regulations.

7. HANDLING AND STORAGE



Precautions for safe handling: Avoid handling conditions that may cause spills. Do not allow the handle of the product without the use of personal protective equipment - PPE (facial mask with filter for particulate matter, pants, boots and long-sleeved shirt).

Safe storage conditions including any incompatibilities: Strong oxidant and flammable. In contact with water releases highly flammable gases. Should be avoid its storage with flammable and oxidant substances such as acids, oxidants, nitrates, sulfates, alcohols, water and mercury compounds. Under heat or fire, cover carefully, avoiding agitation of the material. Store the product in a covered, dry, ventilated, away from ignition sources area and keeping the packages closed, preferably on pallets.

Worker prevention: The product is flammable and oxidant, we recommend the use of facial protection mask for particulate matter and uniform with pants, long-sleeved shirts and safety shoes.

Fire and explosion prevention: As a preventive way, should be avoided the contact with ignition sources, such as a direct flame. In the case of environment containing aluminum powder, avoid the generation of electrical discharges. Do not smoke.

Technical measures: For greater security, do not eat or drink in product handling areas.

Package materials: The packages must comply with the international legislations.

Materials for Recommended Package:

Inner package: Containers of cardboard, metal or wood. Sheets of paper and plastic trays.

Outer package: Cardboard boxes, common natural wood, plywood, reconstituted wood with liner or inner coating.

Inadequate: Steel, metal or provided with cracks or openings.

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8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Control parameters: Not applicable.

Recommended procedures for monitoring: Adopt the procedures indicated in the NR 15, Ministry of Labour, labor hygiene norms FUNDACENTRO and NIOSH or ACGIH procedures.

Engineering control measures: Manipulate the product in a place with good ventilation or, if necessary, use air circulators or exhausts.

Protective measures for elevated subway.



Respiratory protection : If there are release of dust and fumes, use a facial mask with filter for particles material.

Hands protection: Use chemically resistant gloves, such as latex, neoprene or PVC.

Eyes protection: Wear safety or wide vision glasses when there is risk of splashes or dust generation.

Skin and body protection: Utilize full uniform, safety boot, uniform with pants, long-sleeved shirt and safety gloves.

9. PHYSICOCHEMICAL PROPERTIES

Color: White

Physical state: Solid

Odor and odor limit: Odorless

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling temperature range: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Flammability (solid;gas): Not available

Upper/lower flammability or explosive limit: Not available.

Steam pressure: Not available.

Steam density: Not available.

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Relative density: Not available.

Solubility: Not available.

Octanol/water partition coefficient: Not available.

Auto-ignition temperature: Not available

Decomposition temperature: Not available.

Viscosity: Not available.

10. STABILITY AND REACTIVITY



Incompatible materials or substances: acids, oxidants, nitrates, sulfates, alcohols, water and mercury compounds.

Hazardous decomposition products: Violent reactions possible with water (oxygen formation).

Reactivity: Not available.

Chemical stability: Inert product.

Possibility of hazardous reactions: Not available.

Conditions to be avoided: Not available.

Incompatible materials: Not available.

Decomposition hazardous products: When heated the decomposition produces toxic gases (barium fumes and nitrogen oxides).

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Not available.

Skin corrosion/irritation: Not available.

Serious eye injuries/eye irritation: Not available.

Respiratory or skin sensitization: Not available.

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Germ cell mutagenicity: Not available.

Carcinogenicity: Not available.

Toxicity to reproduction: Not available.

Organ toxicity - specific target - single exposure: Not available.

Organ toxicity - specific target - repeated exposure: Not available.

Aspiration hazard: Not available.

12. ECOLOGICAL INFORMATION



Ecotoxicity: Not available.

Persistence and degradability: Not available.

Bioaccumulative potential: Not available.

Mobility in the soil: Not available.

Other adverse effects: Not available.

13. CONSIDERATIONS ON FINAL DESTINATION

Methods of treatment and disposal of residues: The treatment and disposal of the product should be classified according to the ABNT Norm - NBR 10,004 – Residues classification, its disposal must be performed in industrial landfills complying with all state and local environmental regulations.

Product: The product is flammable and oxidant and should be stored in a covered, dry, ventilated and free from ignition sources area. Should be handled by trained personnel with knowledge of the safety standards and product risks.

Products debris: Free of impurities, should be stored in plastic bags or clean containers for future reuse and the contaminated debris should have the same treatment of industrial residues.

Used package: Should be performed an environmentally appropriate disposal.

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14. TRANSPORT INFORMATION

National and international regulations

The product is **not** classified as hazardous for transport, according to the Ministry of Transport and the United Nations(ONU).

Land Transport : Product not classified by MT, Ordinance 201/1997 and Res. ANTT No. 420 of 02/12/2004.

Waterways Transport: Regulation not defined.

Airway Transport: Regulation not defined.

ONU number: 0454.



Proper shipping name: Not applicable.

Class/subclass of main and subsidiary risk: 1.4S.

Risk number: Not applicable.

Package group: Not applicable.

Hazard to the environment: Contain the spill with earth dikes or non-flammable absorbent material to minimize the contaminated area; prevent spillage of the product in sewers and waterways; if necessary, notify local authorities.

15. INFORMATION ON REGULATIONS

1. REGULATORY INFORMATION

Regulations

The label printed on the product package is in compliance with the Ordinance 3214 of June 08, 1978 of the Ministry of Labour and Employment which approves the Regulatory Norms - NR - and regulates preventive labeling (NR 26, Art 26.6 sub item 26.6.4.). Label information: If leakage occurs, sweep the place and pack the residue in plastic bags or metal buckets. If fire occurs, fight the fire with protection powder against metal fires. Suppress with dry sand or cement. Must not be used: water, CO₂ or suppressing foams. If possible and safe, remove containers exposed to flames. Fight the fire with the wind at your back. Leave the area if there is discoloration of tanks or increasing of the flame. Stay away of tanks involved in flames. Flammable. In contact with water releases highly flammable gases.

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If there is fire, extinguish with dry sand, pressurized water extinguisher. For handling, use waterproof gloves. Avoid inhalation, ingestion, contact with skin and eyes.

16. OTHER INFORMATION

The information contained in this record are based on our knowledge of the product. It has been prepared in this record of good faith and represents the best knowledge and experience that you can have on the subject and is intended to describe our product regarding possible concerns, protections to health, occupational safety and the environment, does not mean, however, that completely concludes the subject. We warn that the handling of any chemical substance requires prior knowledge of its hazards for



the user. It is up to the company user of the product promotes training of its employees and contractors about the possible risks from the product. The user of the product is solely responsible for determining the regulations applicable to such use in the relevant jurisdiction. The information in this FISQP represents the current data and reflect our best knowledge for the appropriate handling of the product under normal conditions, according to the specific application of the package and/or literature. Any other use of the product involving the combined use with another product or other processes are responsibility of the user. The data and analyzes were based on the Records of Chemical Products from our suppliers, so we take no responsibility for the laboratory analyzes described. This FISQP is updated periodically in accordance with the applicable health and safety standards. This product should be stored and handled by trained personnel and in accordance with the competent local regulations. The information provided here are based on the best of our current knowledge and aims to ensure to the carrier and final user the information available, in order to avoid the risks inherent in the product. We request that this information be knowledge of all the people who have knowledge and direct and indirect contact with the product. For more information, please contact Thermit Brasil., by the phone, fax and e-mail mentioned in page 1/10. This Chemical Product Safety Information Record (FISQP) is in accordance with the NBR 14725 – 3 June/2012.

Bibliography:

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ABNT NBR 14725-3 of 08.16.2012 – Chemical products - Information on safety, health and environment. Part 3: Labeling.

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