BREACHPEN

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 01/12/2018 Revision date: 02/25/2021 Supersedes: 1.0 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : BREACHPEN

Chemical name : WELDING PENCIL OF THERMITE MIXTURE

Product code : BP-LTE, BP-G2, BP-G2-G, BP-G2-BMC, BP-G2-MC

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Welding

Use advised against : None identified

1.3. Details of the supplier of the safety data sheet

Manufacturer:
ADVANCED DEFENSE COMPONENTS, INC
102 BROWNS SQUARE DR.

WALHALLA, SC 29691

Tel: 1-864-900-3851

1.4. Emergency telephone number

Emergency number : 1-864-900-3851
(Monday to Friday: 8am – 4:30 pm EST)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This product does not pose a physical hazard or health risk in their solid state at ambient temperature and under normal conditions. However, they contain hazardous ingredients that result in listed following hazards under the specific condition when exposed to their powder or fume by inhalation. Fume and dust that during the welding and grinding processes may occur are classified as carcinogenic by inhalation. Skin contact usually is not hazardous but should be avoided to prevent the possible allergic reaction.

Classification

Sensitization-Skin , Category 1
Carcinogenisity, Category 1A
Specific target organ toxicity (Repeated Exposure), Category 1

2.2. Label elements

Labelling

Hazard pictograms :

Signal word : Danger

Hazard statements : May cause an allergic skin reaction
May cause cancer by inhalation
Causes damage to organs through prolonged or repeated exposure

Precautionary statements : Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Avoid breathing dust/fume/mist
Wash face, hands thoroughly after handling
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace

Wear protective gloves/ clothing/ eye protection/ face protection
If on skin: Wash with plenty of water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
If exposed: Call a poison center/doctor
Store locked up
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

Other hazards which do not result in classification : An electric shock, fumes, gases, radiation, spatter, slag and heat are the most significant hazards that may result when the product is used in a welding process. Electric shock can kill. Arc rays can damage eyes and burn skin. Spatter and slag can damage eyes. Spatter, slag, melting metal, arc rays and hot welds can cause burn injuries and start fires. When welding, an arc may be a source of ignition on surrounding combustible materials. Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include; coatings on the metal being welded (such as paint or plating), the number of welders and the volume of the work area, ventilation quality, the position of the welders head with respect to hood. Welding fumes must be considered as carcinogens. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B). Hence, before using welding wire and/or electrodes read and understand the manufacturer's instructions, SDSs, and your employer's safety practices.

2.4. Unknown acute toxicity

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	%
Iron oxide	(CAS No) 1309-37-1	5 - 75
Nickel oxide	(CAS No) 1313-99-1	< 70
Alumina	(CAS No) 1344-28-1	10 - 50

The specific chemical\ component identities and/or the exact component percentages of this material may be withheld as trade secrets.
This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1).
Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In the case of an electric shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). Immediately call a physician.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

First-aid measures after skin contact : The unused product does not irritate the skin but wearing gloves help to prevent possible allergic reactions. For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. In the case of exposure to dust or particles wash with mild soap and water.

First-aid measures after eye contact : For radiation burns due to arc flash, see a physician. In the case of exposure to dust or fumes or particulates, flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.

First-aid measures after ingestion : Unlikely route of exposure. If swallowed, rinse mouth with water (only if the person is conscious). Call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Inhalation is an unlikely route of exposure to this product as supplied.
The primary entry route for welding fumes and gases is by inhalation. Short-term overexposure to welding fumes may result in symptoms like dizziness, nausea, dryness or irritation of the nose, throat or eyes and may aggravate pre-existing respiratory problems (e.g., asthma, emphysema). Long-term overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel above safe exposure limits can cause cancer.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact poison center immediately if ingested. If it is suspected that fumes are still presented, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing breathing mouth to mouth resuscitation.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : This product does not present fire or explosion hazards as shipped. Fine turnings, fine dust from processing may be readily ignitable. Use dry chemical extinguisher.

Unsuitable extinguishing media : DO NOT USE halogenated extinguishing agents on small chips/fines. These fire extinguishing agents will react with the burning material.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Non-combustible as supplied. Fine turnings, fine dust from processing may be readily ignitable. Welding arcs and sparks can ignite surrounding combustibles and flammable materials. Unused welding consumables may remain hot for a period after completion of the welding process.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

Other information : Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : In the case of a release of products, they can be picked up and placed in a container for re-use. In the case of a release of solid welding subjects, they can be picked up and placed in a disposal container. If airborne dust or fume is released, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Do not discard as collected materials as general trash.

6.2. Environmental precautions

Do not allow to enter surface, sewers or groundwater. Wear proper personal protective equipment while handling.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Not applicable.

Solid objects can be easily collected and for re-use. can re-used picked up and placed in a container.

6.4. Reference to other sections

refer to section 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Take necessary precautions and use proper ventilation and absorption system to remove fumes and gases from your breathing zone and the general area. Keep your head out of the fumes. Do not breathe dust, gas, and fumes. Handle with care to avoid stings and cuts. Wear gloves when handling welding products.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep away from incompatible chemicals, as they could cause chemical reactions. Avoid humidity and temperature shocks. Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside a wall. Store in a dry area at ambient temperature. In the case of any broken or torn protective packaging, it should be repacked immediately.

Incompatible materials : Strong alkalis and acids.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Iron oxide (1309-37-1)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	10 mg/m³ (fume)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust)
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (respirable fraction)

Aluminum (7429-90-5)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Alpha alumina (1344-28-1)		
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust)
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (respirable fraction)

Nickel (7440-02-0)		
ACGIH	ACGIH TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the workstation. Local exhaust or ventilation or other engineering controls must be provided to keep fume and emitted gases below the PEL/TLV in the worker's breathing zone. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Protective goggles. Gloves. Protective clothing.

Hand protection : When handling un-used product ear gloves, use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Wear heat protecting gloves (Non-flammable) when using the product.

Suitability and durability of gloves are dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, and dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Eye protection : Use the eye protective equipment that suitable where required. Considering a shade tint 9 lens is recommended in some instances.

Skin and body protection	:	Wear hand, head and body protection, which help to prevent injury from radiation, sparks and electrical shock. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	:	Use adequate ventilation or local exhaust at the arc, to keep the fumes and gases below PEL/TLV's in the worker's breathing zone and the general area. Keep exposures as low as possible.
Other information	:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Solid, rod-like object
Color	:	Grey
Odor	:	Odorless
Odor threshold	:	No data available
pH	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	Not applicable
Melting point	:	No data available
Freezing point	:	Not applicable
Boiling point	:	Not applicable
Flash point	:	Not applicable [Combustion temperature: 5,072 ºF]
Auto-ignition temperature	:	Not applicable [Ignition temperature: 2,300 ºF]
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density at 20 °C	:	No data available
Reletive density	:	2.4 – 2.8
Solubility	:	Insoluble in water
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	Not applicable
Viscosity	:	Not applicable
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Contact with incompatible chemical substances causes generation of gas.

10.2. Chemical stability

The product is stable at normal handling and storage condition

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Humidity and wet condition.

10.5. Incompatible materials

Strong alkalis and acids.

10.6. Hazardous decomposition products

When these products are used in a welding process, hazardous fume and gas decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3, plus those from the base metal and coating.
Constituents of the fume would include iron oxide, carbon oxides, nitrogen oxides, and ozone.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Potential Routes of entry : Inhalation, skin

Acute toxicity : Not classified

(Based on available data, the classification criteria are not met)

No testing on this product is obtained. Toxicity endpoints and acute toxicity estimate (ATE) are evaluated according to the criteria of the third revision of the GHS.

ATE (oral)	> 5,000 mg/kg (Estimated)
ATE (dermal)	> 5,000 mg/kg (Estimated)
ATE (inhalation)	> 5.0 mg/m^3/4hours (Estimated)

Skin corrosion/irritation : Not classified

(Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified

(Based on available data, the classification criteria are not met)

Respiratory or skin sensitization : May cause an allergic skin reaction.

No test data available. Irritation properties are evaluated according to the criteria of the third revision of the GHS.

Germ cell mutagenicity : Not classified

(Based on available data, the classification criteria are not met)

Carcinogenicity : May cause cancer by inhalation

Iron oxide (1309-37-1)	
IARC group	3 – not classifiable

Nickel monoxide (1313-99-1)	
IARC group	1 – carcinogenic to humans
NTP	Evidence of carcinogenicity
OSHA	Hazard Communication Carcinogens

Reproductive toxicity : Not classified

(Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure) : Not classified

(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure

Aspiration hazard : Not classified

(Based on available data, the classification criteria are not met)

Symptoms/injuries after exposure : SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS: Welding Fumes - May result in discomforts such as dizziness, nausea or dryness or irritation of nose, throat or eyes. Aluminum Oxide - Irritation of the respiratory system. Iron, Iron Oxide - None are known. Treat as nuisance dust or fume. Nickel Compounds - Metallic taste, nausea, tightness in chest, metal fume fever, allergic reaction.
LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS: Welding Fumes - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis." Studies have concluded that there is sufficient evidence for ocular melanoma in welders. Aluminum Oxide - Pulmonary fibrosis and emphysema. Iron, Iron Oxide Fumes - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposure to iron and its compounds ceases. Iron and magnetite (Fe_3O_4) are not regarded as fibrogenic materials. Nickel, Nickel Compounds - Lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. Potassium Silicate - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Welding processes can release fumes directly to the environment. Residues from welding consumables and processes could degrade and accumulate in the soil and groundwater.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws. DO NOT FLUSH TO SEWER, WATERSHED, OR WATERWAY.

Use recycling procedures if available. Discard any product, residue, packaging, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

Transport by sea (IMDG)

No additional information available

Air transport (IATA/ ICAO)

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Aluminium oxide (1344-28-1)	
U.S. CERCLA/SARA- Section 313- Emission reporting	1.0 % de minimis concentration (fibrous forms)

15.2. US State regulations

California Proposition 65 - This product contain substances known to the state of California to cause cancer, developmental and/or reproductive harm at low concentration.

Nickel monoxide (1313-99-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

Aluminium oxide (1344-28-1)
Massachusetts RTK New Jersey Worker and Community RTK Pennsylvania Worker and Community RTK

Nickel monoxide (1313-99-1)
Massachusetts RTK New Jersey Worker and Community RTK Pennsylvania Worker and Community RTK

Iron oxide (1309-37-1)
Massachusetts RTK New Jersey Worker and Community RTK Pennsylvania Worker and Community RTK

SECTION 16: Other information

Indication of changes : Not applicable

Revision date : Not applicable

Abbreviation

ACGIH : American Conference of Governmental Industrial Hygienists

ATE : Acute Toxicity Estimate

CAS : Chemical Abstracts Service

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act

CFR : Code of Federal Regulation

CPR : Cardio Pulmonary Resuscitation

DOT : Department Of Transportation

GHS : Globally Harmonized System

IARC	:	International Agency for Research on Cancer
IATA	:	International Air Transport Association
ICAO	:	International Civil Aviation Organization
IMDG	:	International Maritime Dangerous Goods
NTP	:	National Toxicology Program
OSHA	:	Occupational Safety and Health Administration
PEL	:	Permissible Exposure Limit
PVC	:	Polyvinyl Chloride
RCRA	:	Resource Conservation and Recovery Act
RTK	:	Right to Know
SARA	:	Superfund Amendments and Reauthorization Act
TSCA	:	Toxic Substances Control Act
TWA	:	Time Weighted Average

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.