**SAFETY DATA SHEET**

(REACh regulation (EC) n° 1907/2006 - n° 2015/830)

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1. **Product identifier**
   - **Product name**: GRAVOFIX - 19360
   - **Product code**: GRAV 008.1.

2. **Relevant identified uses of the substance or mixture and uses advised against**
   - Fixing agent for bonding to plastic.

3. **Details of the supplier of the safety data sheet**
   - **Registered company name**: GRAVOTECH MARKING SAS.
   - **Address**: 56, avenue Jean Jaurès. 10600 La Chapelle Saint Luc. France.
   - **Telephone**: +33 (0)3 25 41 65 65. **Fax**: +33 (0)3 25 79 04 25.
   - **e-mail**: info@gravograph.fr
   - **http://www.gravograph.com**

4. **Emergency telephone number**: +33 (0)1 45 42 59 59.

### SECTION 2: HAZARDS IDENTIFICATION

1. **Classification of the substance or mixture**
   - In compliance with EC regulation No. 1272/2008 and its amendments.
   - Flammable liquid, Category 2 (Flam. Liq. 2, H225).
   - Repeated exposure may cause skin dryness or cracking (EUH066).
   - Eye irritation, Category 2 (Eye Irrit. 2, H319).
   - Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H336).
   - This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2. **Label elements**
   - **Signal Word**: DANGER
   - **Product identifiers**: 606-001-00-8, ACETONE
   - **Additional labeling**: H225, H319, H336, EUH066
   - **Hazard statements**: Highly flammable liquid and vapour.
   - Causes serious eye irritation.
   - May cause drowsiness or dizziness.
   - Repeated exposure may cause skin dryness or cracking.

3. **Precautionary statements - Prevention**:
   - **P210**: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
   - **P261**: Avoid breathing vapours.
   - **P264**: Wash hands thoroughly after handling.
   - **P280**: Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statements - Response :
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304 + P340  IF INHALED: Remove person to fresh air and keep 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.
P312  Call a POISON CENTER/doctor/ if you feel unwell.
P337 + P313  If eye irritation persists: Get medical advice/attention.

Precautionary statements - Storage :
P403 + P235  Store in a well-ventilated place. Keep cool.

Precautionary statements - Disposal :
P501  Dispose of contents/container at a disposal facility in accordance with local regulations.

2.3. Other hazards
The substance does not fulfil the PBT or vPvP criteria in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

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<thead>
<tr>
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<td>CAS: 67-64-1</td>
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Information on ingredients :
[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :
In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.
If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.
If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

In the event of splashes or contact with eyes :
Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.
If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :
Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.
Watch out for any remaining product between skin and clothing, watches, shoes, etc.
If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :
In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.
Keep the person exposed at rest. Do not force vomiting.
Seek medical attention, showing the label.
If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

4.2. Most important symptoms and effects, both acute and delayed
No data available.

4.3. Indication of any immediate medical attention and special treatment needed
No data available.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.
Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.
5.1. Extinguishing media

Keep packages near the fire cool, to prevent pressurised containers from bursting.

Suitable methods of extinction

In the event of a fire, use:
- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- halon
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO2)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use:
- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed:
- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid inhaling the vapors.
Avoid any contact with the skin and eyes.
If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.
Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

Always wash hands after handling.
Remove and wash contaminated clothing before re-using.
Ensure that there is adequate ventilation, especially in confined areas.

Fire prevention:

Handle in well-ventilated areas.
Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.
Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.
Prevent the accumulation of electrostatic charges with connections to earth.
Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.
Keep packages tightly closed and away from sources of heat, sparks and naked flames.
Do not use tools which may produce sparks. Do not smoke.
Prevent access by unauthorised personnel.

**Recommended equipment and procedures:**

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid inhaling vapors.

Provide vapor extraction at the emission source and also general ventilation of the premises.

In all cases, recover emissions at source.

Avoid skin and eye contact with this substance.

Packages which have been opened must be reclosed carefully and stored in an upright position.

**Prohibited equipment and procedures:**

No smoking, eating or drinking in areas where the substance is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

**Storage**

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

**Packaging**

Always keep in packaging made of an identical material to the original.

7.3. **Specific end use(s)**

No data available.

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**SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. **Control parameters**

**Occupational exposure limits:**


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<th>CAS</th>
<th>VME-mg/m³</th>
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- **ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010):**

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- **Germany - AGW (BAuA - TRGS 900, 29/01/2018):**

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- **Belgium (Arrêté du 09/03/2014, 2014):**

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- **France (INRS - ED984 :2016):**

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- **Switzerland (SUVAPRO 2017):**

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- **UK / WEL (Workplace exposure limits, EH40/2005, 2011):**

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8.2. **Exposure controls**

**Personal protection measures, such as personal protective equipment**

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE):
Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- **Eye / face protection**
  Avoid contact with eyes.
  Use eye protectors designed to protect against liquid splashes.
  Before handling, wear safety goggles with protective sides accordance with standard EN166.
  In the event of high danger, protect the face with a face shield.
  Prescription glasses are not considered as protection.
  Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.
  Provide eyewash stations in facilities where the product is handled constantly.

- **Hand protection**
  Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.
  Gloves must be selected according to the application and duration of use at the workstation.
  Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
  Type of gloves recommended :
  - PVA (Polyvinyl alcohol)
  - Butyl Rubber (Isobutylen-isoprene copolymer)
  Recommended properties :
  - Impervious gloves in accordance with standard EN374

- **Body protection**
  Avoid skin contact.
  Wear suitable protective clothing.
  Suitable type of protective clothing :
  In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605 to prevent skin contact.
  In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.
  Work clothing worn by personnel shall be laundered regularly.
  After contact with the product, all parts of the body that have been soiled must be washed.

- **Respiratory protection**
  Avoid breathing vapours.
  If the ventilation is insufficient, wear appropriate breathing apparatus.
  When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.
  Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :
  - A1 (Brown)

### SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

| Physical state : | Fluid liquid. |
| Colour : | Colourless. |
| Odour : | Characteristic. |
| Empirical formula : | CH3COCH3 |
| Molecular weight : | 58.08 |

**Important health, safety and environmental information**

| pH : | Not relevant. |
| Boiling point/boiling range : | 55 °C. |
| Flash Point Interval : | FP < 23°C |
| Flammability (solid, gas) : | 2.6 |
| Explosive properties, lower explosivity limit (%) : | 13 |
| Vapour pressure (50°C) : | Below 110 kPa (1.10 bar). |
| Density : | 0.79 g/cm³ (20°C) |
| Water solubility : | Soluble. |
Viscosity : 32 mPas
Melting point/melting range : 94 °C.
Self-ignition temperature : 465 °C.

9.2. Other information
No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity
No data available.

10.2. Chemical stability
This substance is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions
When exposed to high temperatures, the substance can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid
Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.
Avoid :
- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces

10.5. Incompatible materials
Bases, Oxidizing agents, Reducing agents, Acetone reacts violently with phosphorous oxychloride.

10.6. Hazardous decomposition products
The thermal decomposition may release/form :
- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Exposure to vapours from this solvent in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.
Repeated or prolonged contact with the substance may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.
May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.
Splashes in the eyes may cause irritation and reversible damage
Narcotic effects may occur, such as drowsiness, narcosis, decreased alertness, loss of reflexes, lack of coordination or dizziness.
Effects may also occur in the form of violent headaches or nausea, judgement disorder, giddiness, irritability, fatigue or memory disturbance.

11.1.1. Substances
Acute toxicity :
LC50 (rat - 4h) = 5800 mg/kg
LC50 (rat - 4h) = 20000 mg/kg

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity
FISH CL50 (24h) = 8750 mg/l
DAPHNIA CE50 (24h) = 6400 mg/l

12.2. Persistence and degradability
Soil - COD: 1920 mg/g
BOD5: 1850 mg/g

12.3. Bioaccumulative potential
No data available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment

Made under licence of European Label System, Software of INFODYNE (http://www.infodyne.fr)
12.6. Other adverse effects
No data available.

German regulations concerning the classification of hazards for water (WGK):
WGK 1 (VwVwS vom 27/07/2005, KBws): Slightly hazardous for water.

SECTION 13: DISPOSAL CONSIDERATIONS
Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods
Do not pour into drains or waterways.

Waste:
Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.
Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.
Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging:
Empty container completely. Keep label(s) on container.
Give to a certified disposal contractor.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number
1090

14.2. UN proper shipping name
UN1090=ACETONE

14.3. Transport hazard class(es)
- Classification:

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<th>Class</th>
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<th>Label</th>
<th>Ident.</th>
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<th>Provis.</th>
<th>EQ</th>
<th>Cat.</th>
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IMDG

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IATA

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<td>1 L</td>
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For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.
For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
No data available.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
- Classification and labelling information included in section 2:
The following regulations have been used:
- EU Regulation No. 1272/2008 amended by EU Regulation No. 2017/776 (ATP 10)
- Container information:
  No data available.

- Particular provisions:
  No data available.

- German regulations concerning the classification of hazards for water (WGK):
  WGK 1 (VwVwS vom 27/07/2005, KBws) : Slightly hazardous for water.

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704):
  NFPA 704, Labelling: Health=2 Inflammability=3 Instability/Reactivity=1 Specific Risk=none

- Swiss ordinance on the incentive tax on volatile organic compounds:
  67-64-1 acétone

15.2. Chemical safety assessment
  No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>EUH066</td>
<td>Repeated exposure may cause skin dryness or cracking.</td>
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Abbreviations:

ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
WGK : Wassergefahrdungsklasse (Water Hazard Class).
GHS02 : Flame
GHS07 : Exclamation mark
PBT : Persistent, bioaccumulable and toxic.
vPvB : Very persistent, very bioaccumulable.
SVHC : Substances of very high concern.