# Safety Data Sheet
## acc. to OSHA HCS

Printing date 07/17/2026 Reviewed on 07/17/2026

## 1 Identification

· **Product identifier**

· **Trade name:** GRF WDF-05 BO 1L*8 L001
· **Application of the substance / the mixture** Adhesive

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Bison International
Dr.A.F.Philipsstraat 9
NL-4462 EW Goes
PO Box 160
NL-4460 AD Goes
tel. +31 88 3235700
fax. +31 88 3235800
e mail: sds@boltonadhesives.com

· **Information department:** PSRA
· **Emergency telephone number:**
Bison and Griffon products: +31 88 3235700. Operating hours mo-fr 08:00h-17:00h (CET)
UHU products: + 49 (0) 30/19240 (Notruf). Operating hours mo-fr 08:00h-17:00h (CET)

For detailed information contact the national Poison Centre @
https://poisoncentres.echa.europa.eu/appointed-bodies

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

| | |
|---|---|
| Flammable Liquids 2 | H225 Highly flammable liquid and vapor. |
| Eye Irritation 2A | H319 Causes serious eye irritation. |
| Carcinogenicity 2 | H351 Suspected of causing cancer. |
| Specific Target Organ Toxicity - Single Exposure 3 | H335 May cause respiratory irritation. |
| Specific Target Organ Toxicity - Single Exposure 3 | H336 May cause drowsiness or dizziness. |

· **Label elements**
· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Tetrahydrofuran
Butanone
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.

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H336 May cause drowsiness or dizziness.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with national regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**




Health = 2
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**




Health = 2
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Adhesive

| · **Dangerous components:** | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 50-100% |
| 78-93-3 | Butanone | 25-50% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
No special measures required.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.

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· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Water haze
Alcohol resistant foam
Fire-extinguishing powder
Carbon dioxide
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture**
No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.
· **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

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## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Send for recovery or disposal in suitable receptacles.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 100 ppm |
| 78-93-3 | Butanone | 200 ppm |
| 9002-86-2 | polyvinyl chloride | 2.4 mg/m3 |
| 112945-52-5 | fumed silica | 18 mg/m3 |
| 67-63-0 | propan-2-ol | 400 ppm |
| 9003-39-8 | Polyvinylpyrrolidon | 51 mg/m3 |
| 616-45-5 | 2-pyrrolidone | 15 ppm |

| · **PAC-2:** | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 500 ppm |

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| | | |
|---|---|---|
| 78-93-3 | Butanone | 2700 ppm |
| 9002-86-2 | polyvinyl chloride | 26 mg/m3 |
| 112945-52-5 | fumed silica | 100 mg/m3 |
| 67-63-0 | propan-2-ol | 2000 ppm |
| 9003-39-8 | Polyvinylpyrrolidon | 560 mg/m3 |
| 616-45-5 | 2-pyrrolidone | 170 ppm |

· **PAC-3:**

| | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 5000 ppm |
| 78-93-3 | Butanone | 4000 ppm |
| 9002-86-2 | polyvinyl chloride | 160 mg/m3 |
| 112945-52-5 | fumed silica | 630 mg/m3 |
| 67-63-0 | propan-2-ol | 12000 ppm |
| 9003-39-8 | Polyvinylpyrrolidon | 20000 mg/m3 |
| 616-45-5 | 2-pyrrolidone | 990 ppm |

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Storage class:** 3
· **Specific end use(s)** No further relevant information available.

* 

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**109-99-9 Tetrahydrofuran**

| | |
|---|---|
| PEL | Long-term value: 590 mg/m³, 200 ppm |

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| | |
|---|---|
| REL | Short-term value: 735 mg/m³, 250 ppm<br>Long-term value: 590 mg/m³, 200 ppm |
| TLV | Short-term value: 295 mg/m³, 100 ppm<br>Long-term value: 147 mg/m³, 50 ppm<br>Skin, A3, BEI |

**78-93-3 Butanone**

| | |
|---|---|
| PEL | Long-term value: 590 mg/m³, 200 ppm |
| REL | Short-term value: 885 mg/m³, 300 ppm<br>Long-term value: 590 mg/m³, 200 ppm |
| TLV | Short-term value: 150 ppm<br>Long-term value: 75 ppm<br>BEI, Skin |

· **Ingredients with biological limit values:**

**78-93-3 Butanone**

| | |
|---|---|
| BEI | 2 mg/L<br>Medium: urine<br>Time: end of shift<br>Parameter: Methyl ethyl ketone (nonspecific) |

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Suitable respiratory protective device recommended.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Use suitable respiratory protective device in case of insufficient ventilation.
· **Recommended filter device for short term use:** Filter A
· **Protection of hands:**
Solvent resistant gloves



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
Recommended thickness of the material: > 0,12 mm

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Butyl rubber, BR
Nitrile rubber, NBR
Recommended thickness of the material: > 0,7 mm

· **Penetration time of glove material**
For the mixture of chemicals mentioned below the penetration time has to be at least 10 minutes (Permeation according to EN 374 Part 3: Level 1).
For the mixture of chemicals mentioned below the penetration time has to be at least 120 minutes (Permeation according to EN 374 Part 3: Level 4).

· **Eye protection:**



Tightly sealed goggles

Goggles recommended during refilling.

· **Body protection:** Solvent resistant protective clothing

* 
## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Appearance:** | |
| **Form:** | Fluid |
| **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Odor threshold:** | Not determined |
| · **pH-value:** | Not determined |
| · **Change in condition** | |
| **Melting point/Melting range:** | Undetermined |
| **Boiling point/Boiling range:** | 65.5 °C (149.9 °F) |
| · **Flash point:** | -21 °C (-5.8 °F) |
| · **Flammability:** | Highly flammable. |
| · **Auto igniting:** | 230 °C (446 °F) |
| · **Decomposition temperature:** | Not determined |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · **Explosion limits:** | |
| **Lower:** | 1.5 Vol % |
| **Upper:** | 12 Vol % |
| · **Vapor pressure at 20 °C (68 °F):** | 200 hPa (150 mm Hg) |
| · **Vapor pressure at 50 °C (122 °F):** | 550 hPa (412.5 mm Hg) |
| · **Density at 20 °C (68 °F):** | 0.965-0.966 g/cm³ (8.053-8.061 lbs/gal) |

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| | |
|---|---|
| · **Relative density** | Not determined |
| · **Vapor density** | Not determined |
| · **Evaporation rate** | Not determined |
| · **Solubility in / Miscibility with Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not determined |
| · **Viscosity:** | |
| **Dynamic at 20 °C (68 °F):** | 675 mPas |
| **Kinematic:** | Not determined |
| · **Solvent content:** | |
| **Organic solvents:** | 82.9 % |
| **VOC content:** | 82.92 %<br>~803.5 g/l / ~6.71 lb/gal |
| **Solids content:** | 16.9 % |
| · **Other information** | All relevant physical data were determined for the mixture. All non-determined data are not measurable or not relevant for the characterization of the mixture. |

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** Danger of toxic pyrolysis products.

## 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| **109-99-9 Tetrahydrofuran** | | |
| Oral | LD50 | 500 mg/kg (rat) |
| Dermal | LD50 | >2000 mg/kg (rat) |
| Inhalative | LC50/4 h | >5000 mg/l (rat) |
| **78-93-3 Butanone** | | |
| Oral | LD50 | >2193 mg/kg (rat) |
| Dermal | LD50 | >8050 mg/kg (rat) |

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· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 2B |
| 9002-86-2 | polyvinyl chloride | 3 |
| 128-37-0 | Butylated hydroxytoluene | 3 |
| 67-63-0 | propan-2-ol | 3 |
| 9003-39-8 | Polyvinylpyrrolidon | 3 |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

· **Germ cell mutagenicity** Not applicable

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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Disposal must be made according to official regulations.

· **Uncleaned packagings:**
· **Recommendation:**
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR/ADN, IMDG, IATA** | UN1133 |
| · **UN proper shipping name** | |
| · **DOT** | Adhesives |
| · **ADR/ADN** | 1133 ADHESIVES |
| · **IMDG, IATA** | ADHESIVES |
| · **Transport hazard class(es)** | |
| · **DOT** |  |
| · **Class** | 3 Flammable liquids |
| · **Label** | 3 |
| · **ADR/ADN** |  |
| · **Class** | 3 (F1) Flammable liquids |
| · **Label** | 3 |
| · **IMDG, IATA** |  |
| · **Class** | 3 Flammable liquids |
| · **Label** | 3 |
| · **Packing group** | |
| · **DOT, ADR/ADN, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Flammable liquids |
| · **Hazard identification number (Kemler code):** | - |
| · **EMS Number:** | F-E,S-D |

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| | |
|---|---|
| · **Stowage Category** | A |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable |
| · **Transport/Additional information:** | |
| · **DOT** | |
| · **Quantity limitations** | On passenger aircraft/rail: 60 L<br>On cargo aircraft only: 220 L |
| · **ADR/ADN** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **Remarks:** | For substances with class 3 according to IMDG-Code chapter 2.3.2.2 packing group is classified in packing group III, as viscosity is in accordance with requirements (flow time t > 100s). |
| · **UN "Model Regulation":** | UN 1133 ADHESIVES, 3, III |

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 67-63-0 | propan-2-ol |

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 109-99-9 | Tetrahydrofuran |

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· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | SC |
| 78-93-3 | Butanone | I |

· **TLV (Threshold Limit Value)**

| | | |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | A3 |
| 9002-86-2 | polyvinyl chloride | A4 |
| 128-37-0 | Butylated hydroxytoluene | A4 |
| 67-63-0 | propan-2-ol | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Tetrahydrofuran
Butanone

· **Hazard statements**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with national regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** PSRA
· **Contact:** PSRA
· **Date of preparation / last revision** 07/17/2026 / 36
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flammable Liquids 2: Flammable liquids – Category 2
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Carcinogenicity 2: Carcinogenicity – Category 2
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3
· *** Data compared to the previous version altered.**

US