1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **BRIGHT ZINC GALVE SPRAY**

Article number: **R224**

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

Product category: PC9a: Coatings and paints, thinners, paint removers.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:
TYGRIS Industrial
Unit 31, Kyle Road Industrial Estate
Irvine
Ayrshire
KA12 8LE
Tel +44 (0) 1294 311 066
Fax +44 (0) 1294 277 115
Email technical@tygrisindustrial.com

Further information obtainable from: Technical Department

1.4 Emergency telephone number: Tel +44 (0) 1294 311 066

2. Hazards identification

2.1. Classification of the substance or mixture

Physical hazards: Aerosol 1 - H222, H229

Health hazards: Eye Irrit. 2 - H319 STOT SE 3 - H336

Environmental hazards: Aquatic Chronic 2 – H411

2.2. Label elements

Hazard Statements:
H222: Extremely flammable aerosol.
H229: Pressurised container: may burst if heated
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H411: Toxic to aquatic life with long lasting effects.

Hazard pictograms:
GHS02: Flame
GHS07: Exclamation mark
GHS09: Environmental

Signal Word: Danger

Precautionary Statements:
P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211: Do not spray on an open flame or other ignition source.
P251: Do not pierce or burn, even after use.
P260: Do not breathe spray.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves / eye protection.
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.
P403: Store in a well-ventilated place.
P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Contains: Acetone

Additional information: EUH066: Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

3. Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

ACETONE
(Registration number: 01- 2119471330-49-XXXX)

EC	CAS	Index number	CLP Classification	Percent
200-662-2	67-64-1	606-001-00-8	Flam. Liq. 2 - H225 Eye Irrit. 2 - H319 STOT SE 3 - H336	25-<50%

BUTANE
(Registration number: 01-2119474691-32-xxxx)

203-448-7	106-97-8	601-004-00-0	Flam. Gas 1 - H220 Press. Gas C - H280	10-<25%

PROPANE
(Registration number: 01-2119486944-21-xxxx)

200-827-9	74-98-6	601-003-00-5	Flam. Gas 1 - H220 Press. Gas C - H280	10-<25%

HYDROCARBONS,C9,AROMATICS
(Registration number: 01-2119455851-35)

918-668-5	-	-	Flam. Liq. 3 - H226 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411 STOT SE 3 - H335-H336	2.5- <10%

ZINC POWDER - ZINC DUST (STABILIZED)
(Registration number: 01-2119467174-37)

231-175-3	7440-66-6	-	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	1-<2.5%

BUTANOL
(Registration number: 01-2119484630-38

200-751-6	71-36-3	603-004-00-6	Flam. Liq. 3 - H226 Eye Dam. 1 - H318 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 STOT SE 3 - H335-H336	1-2.5%

HYDROCARBONS,C10-C13,N-ALKANES,CYCLIC,<2% AROMATES, BENZENE <0.1
(Registration number: 01-2119457273-39)

918-481-9	-	-	Asp. Tox. 1 - H304	0.1-<1.0%

TRIZINC BIS(ORTHOPHOSPHATE)
(Registration number: 01-2119463881-32)

231-944-3	7779-90-0	-	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	0.25-<1%

ZINC OXIDE
(Registration number: 01-2119463881-32)

215-222-5	1314-13-2	-	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	0.1-<0.25%

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

4. First aid measures

4.1. Description of first aid measures

Skin contact: Generally the product does not irritate the skin.

Eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Ingestion: Do not induce vomiting; call for medical help immediately.

Inhalation: Supply fresh air; consult doctor in case of complaints.

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

Important symptoms / effects: No further relevant information available.

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

Immediate / special treatment: No further relevant information available.

5. Firefighting measures

5.1 Extinguishing media

Extinguishing media: Water haze. Fire-extinguishing powder. Carbon dioxide. Alcohol resistant foam

Unsuitable extinguishing media: Water with full jet.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: No further relevant information available.

5.3. Advice for fire-fighters

Special protective equipment for firefighters: Mount respiratory protective device.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Wear protective equipment. Keep unprotected persons away.

6.2. Environmental precautions

Environmental precautions: Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents.

6.4. Reference to other sections

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.

7. Handling and storage

7.1 Precautions for safe handling

Handling requirements: Ensure good ventilation/exhaustion at the workplace. Open and handle receptacle with care.

Fire and explosion protection: Do not spray onto a naked flame or any incandescent material. Keep ignition sources away - Do not smoke. Protect against electrostatic charges. Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool location. Observe official regulations on storing packagings with pressurised containers. Keep receptacle tightly sealed. Do not seal receptacle gas tight. Store in cool, dry conditions in well sealed receptacles. Protect from heat and direct sunlight.

7.3. Specific end use(s)

Specific end use(s): No further relevant information available.

8. Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits:

ACETONE 67-64-1

Long-term exposure limit (8-hour TWA)	Short-term exposure limit (15-minute)	Carcinogenic
WEL 500 ppm, 1210 mg/m³	WEL 1500 ppm, 3620 mg/m³	-

BUTANE 106-97-8 (CONTAINING < 0.1% BUTADIENE (203-450-8)

WEL 150 ppm, 724 mg/m³	WEL 200 ppm, 966 mg/m³	If more than 0.1% of buta-1.3-diene

PROPANE 74-98-6

OEL 1000 ppm, 1800 mg/m³	WEL 2000 ppm, 3600 mg/m³	-

BUTANOL 71-36-3

-	WEL 50 ppm, 154 mg/m³	-

HYDROCARBONS, C10-C13, N-ALKANES, CYCLIC, <2% AROMATES, BENZENE <0.1%

-	WEL 184 ppm, 1200 mg/m³	-

WEL = Workplace Exposure Limits

DNEL/PNEC Values

Hazardous ingredients:

ACETONE

Type	Exposure	Value	Population	Effect
DNEL	Dermal	186 mg/kg/day	Workers	Systemic
DNEL	Inhalation	2420 mg/m³	Workers	Local
DNEL	Inhalation	1210 mg/m³	Workers	Systemic
DNEL	Oral	62 mg/kg/day	Consumers	Systemic
DNEL	Dermal	62 mg/m³	Consumers	Systemic
DNEL	Inhalation	200 mg/m³	Consumers	Systemic
PNEC	Marine water	1.06 mg/l	-	-
PNEC	Freshwater sediments	30.4 mg/kg	-	-
PNEC	Marine sediments	3.04 mg/kg	-	-
PNEC	Soil (agricultural)	29.5 mg/kg	-	-

HYDROCARBONS, C9, AROMATICS

Type	Exposure	Value	Population	Effect
DNEL	Oral	11 mg/kg/day	Consumers	Systemic
DNEL	Dermal	11 mg/m³	Consumers	Systemic
DNEL	Dermal	25 mg/m³	Workers	Systemic
DNEL	Inhalation	35 mg/m³	Consumers	Systemic
DNEL	Inhalation	103 mg/m³	Workers	Systemic

ZINC POWDER -ZINC DUST (STABILIZED) 7440-66-6

Type	Exposure	Value	Population	Effect
DNEL	Oral	50 mg/kg/day	Workers	Systemic
DNEL	Dermal	5,000 mg/m^3	Consumers	Systemic
DNEL	Dermal	5,000 mg/m^3	Workers	Systemic
DNEL	Inhalation	5.5 mg/m^3	Consumers	Systemic
DNEL	Inhalation	8 mg/m^3	Workers	Systemic
PNEC	Freshwater	20.6 mg/l	-	-
PNEC	Marine water	6.1 mg/l	-	-
PNEC	Freshwater sediment	118 mg/kg	-	-
PNEC	Soil (agricultural)	56.6 mg/kg	-	-
PNEC	Sewage Treatment Plant	52 mg/kg	-	-
PNEC	Marine water sediment	56.5 mg/kg	-	-

BUTANOL 71-36-3

Type	Exposure	Value	Population	Effect
DNEL	Oral	11 mg/kg/day	Consumers	Systemic
DNEL	Dermal	11 mg/m^3	Consumers	Systemic
DNEL	Dermal	25 mg/m^3	Workers	Systemic
DNEL	Inhalation	35 mg/m^3	Consumers	Systemic
DNEL	Inhalation	103 mg/m^3	Workers	Systemic

Additional information: The lists valid during the making were used as basis.

8.2. Exposure controls

Protective equipment:

General protective and hygienic measures: 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.

Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. Use suitable respiratory protective device in case of insufficient ventilation. Filter A/P2.

Hand protection: Use 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: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material: The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Tightly sealed goggles.

Body protection: Use protective suit. (EN-13034/6)

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

State:	Aerosol
Colour:	According to product specification
Odour:	Characteristic
Initial boiling point and range:	Not applicable, as aerosol.
Flash point:	Not applicable, as aerosol.
Ignition temperature:	> 200°C (> 392°F)
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosion limits:	Lower: 0.7 Vol % Upper: 13.0 Vol %
Vapour pressure:	8300 hPa @ 20°C (68°F)
Density:	0.71 g/cm³ @ 20°C (68°F)
Solubility(ies):	Not miscible or difficult to mix.
Solvent content:	90.3% organic solvents
Solids content:	7.4%

9.2. Other information

Other information:	No further relevant information available.

10. Stability and reactivity

10.1. Reactivity

Reactivity:	No further relevant information available.

10.2. Chemical stability

Chemical stability:	No decomposition if used according to specifications.

10.3. Possibility of hazardous reactions

Hazardous reactions:	No dangerous reactions known.

10.4. Conditions to avoid

Conditions to avoid:	No further relevant information available.

10.5. Incompatible materials

Materials to avoid:	No further relevant information available.

10.6. Hazardous decomposition products

Hazardous decomposition products:	No dangerous decomposition products known.

11. Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

ACETONE 67-64-1

Oral	RAT	LD50	5800	mg/kg
Dermal	RBT	LD50	7800	mg/kg
Inhalative	RAT	4H LC50	>20	mg/m³

ZINC POWDER -ZINC DUST (STABILIZED) 7440-66-6

Oral	RAT	LD50	>2,000	mg/kg
Inhalative	RAT	4H LC50	>5.4	mg/m³

BUTANOL 71-36-3

Oral	RAT	LD50	2292	mg/kg
Dermal	RBT	LD50	3430	mg/kg
Inhalative	RAT	4H LC50	>17.76	mg/m³

TRIZINC BIS (ORTHOPHOSPHATE) 7779-90-0

Oral	RAT	LD50	5000	mg/kg

Primary irritant effect

Skin contact: No data available.

Eye contact: Causes serious eye irritation.

Inhalation: No data available.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

STOT-single exposure: May cause drowsiness or dizziness.

STOT-repeated exposure: No data available.

Aspiration hazard: No data available.

12. Ecological information

12.1. Toxicity

Hazardous ingredients:

ACETONE 67-64-1

DAPHNIA MAGNA	48H EC50	8800	mg/l
FISH	48H EC50	8300	mg/l

HYDROCARBONS, C9, AROMATICS

PSEUDOKIRCHNERIELLA SUBCAPITATA	NOELR (72h)	1	mg/l
DAPHNIA MAGNA	48H EC50	3.2	mg/l
ONCORHYNCHUS MYKISS	96H LL50	9.2	mg/l

ZINC POWDER -ZINC DUST (STABILIZED) 7440-66-6

DAPHNIA MAGNA	EC50	354	mg/l
CRUSTACEEEN-PALAEMON ELEGANS	21D NOEC	178	mg/l
CERATOPHYLLUM DEMERSUM	72H NOEC	9	mg/l
PSEUDOKIRCHNERIELLA SUBCAPITATA	72H NOEC	0.017	mg/l
PSEUDOKIRCHNERIELLA SUBCAPITATA	72H NOEC	72.9	mg/l
CYPRINUS CARPIO	4W NOEC	8.3	mg/l
DAPHNIA MAGNA	21D EC10	59.2	mg/l
ALGAE	72H EC10	27.3	mg/l
SELENASTRUM CAPRICORNATUM	72H EC50	0.17	mg/l
ONCORHYNCHUS MYKISS	96H LC50	0.41	mg/l
DAPHNIA MAGNA	48H EC50	1	mg/l
ALGAE	96H EC50	0.527	mg/l
PIMEPHALES PROMELAS	LC50	238-269	mg/l

BUTANOL 71-36-3

DAPHNIA MAGNA	21D NOEC	4.1	mg/l
PIMEPHALES PROMELAS	96H LC50	1376	mg/l
DAPHNIA MAGNA	48H EC50	1328	mg/l
SELENASTRUM CAPRICORNATUM	EC50	225	mg/l

TRIZINC BIS (ORTHOPHOSPHATE) 7779-90-0

ONCORHYNCHUS MYKISS	96H LC50	0.14	mg/l
DAPHNIA MAGNA	48H EC50	2.34	mg/l
DESMODESMUS SUBSPICATUS	72H EC50	0.14	mg/l

12.2. Persistence and degradability

Persistence and degradability: No further relevant information available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No further relevant information available.

12.4. Mobility in soil

Mobility: No further relevant information available.

Ecotoxical effects: Toxic for fish

Additional ecological information: Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water. Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Toxic for aquatic organisms.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: No further relevant information available.

13. Disposal considerations

13.1. Waste treatment methods

General information: Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging: Disposal must be made according to official regulations.

14. Transport information

UN Number (ADR): 1950

UN Number (IMDG): 1950

UN Number (IATA): 1950

14.2 UN proper shipping name

Proper shipping name (ADR): 1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS

Proper shipping name (IMDG): AEROSOLS (Hydrocarbons,C9,aromatics, zinc powder - zinc dust (stabilized)), MARINE POLLUTANT

Proper shipping name (IATA): AEROSOLS, flammable

14.3. Transport hazard class(es)

ADR class:	2,5F Gases
ADR label:	2.1
IMDG, IATA class:	2.1
IMDG, IATA label:	2.1
Transport labels:	

14.4. Packing group

Packing group:	Not applicable.

14.5 Environmental hazards

Contains:	Product contains environmentally hazardous substances: zinc powder -zinc dust (stabilized).
Marine pollutant:	Yes
Special marking (ADR):	Symbol (fish and tree)

14.6 Special precautions for user

Warning:	Gases
EmS:	F-D, S-U
Stowage code:	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
Segregation code:	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow “separated from” class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

Transport/Additional information:

ADR/IMDG Limited quantities (LQ)	1L
ADR/IMDG Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
ADR/IMDG Transport category:	2
ADR/IMDG Tunnel restriction code:	D
UN “Model Regulation”:	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU

Named dangerous substances - ANNEX I:	None of the ingredients is listed.
Seveso category:	P3a FLAMMABLE AEROSOLS E2 Hazardous to the Aquatic Environment
Qualifying quantity (tonnes) for the application of lower-tier requirements:	150 t
Qualifying quantity (tonnes) for the application of upper-tier requirements:	500 t
REGULATION (EC) No 1907/2006 ANNEX XVII:	Conditions of restriction: 3
National regulations:	Class: NK Share in %: 75-<100
VOC-CH:	90.31 %
VOC-EU:	642.1 g/l
Danish MAL:	Code 5-3
Chemical safety assessment:	No chemical safety assessment has been carried out.

16. Other information

Other information:

This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

Phrases used in s.2 and s.3:

H220: Extremely flammable gas.
H225: Highly flammable liquid and vapour.
H226: Flammable liquid and vapour.
H280: Contains gas under pressure; may explode if heated.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Phrases used in s.2 and s.3:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).
ICAO: International Civil Aviation Organisation.
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
IMDG: International Maritime Code for Dangerous Goods.
IATA: International Air Transport Association.
GHS: Globally Harmonised System of Classification and Labelling of Chemicals.
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).
MAL-Code: Måleteknisk Arbejdshygiejnisk Luftbehov (Regulation for the labeling concerning inhalation hazards, Denmark).
DNEL: Derived No-Effect Level (REACH).
PNEC: Predicted No-Effect Concentration (REACH).
LC50: Lethal concentration, 50 percent.
LD50: Lethal dose, 50 percent.
PBT: Persistent, Bioaccumulative and Toxic.
vPvB: very Persistent and very Bioaccumulative.
Flam. Gas 1: Flammable gases – Category 1.
Aerosol 1: Aerosols – Category 1.
Press. Gas (Comp.): Gases under pressure – Compressed gas.
Flam. Liq. 2: Flammable liquids – Category 2.
Flam. Liq. 3: Flammable liquids – Category 3.
Acute Tox. 4: Acute toxicity – Category 4.
Skin Irrit. 2: Skin corrosion/irritation – Category 2.
Eye Dam. 1: Serious eye damage/eye irritation – Category 1.
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2.
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3.
Asp. Tox. 1: Aspiration hazard – Category 1.
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1.
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1.
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2.

Legal disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.