SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

Product name :	**SODEL 3333FCG**
Description / identification :	Flux cored wire, Alloy steel
Recommended use :	Use for arc welding, FCAW
Restriction on use :	Not known. Read this SDS before using this product.
Manufacturer / Supplier :	Sodel LTD. 823A McCaffrey St-Laurent, Québec H4T1N3
Telephone :	1-800-363-1821
Emergency telephone :	1-800-363-1821

2. HAZARDS IDENTIFICATION

Hazard classification	This product is not classified according to GHS criteria. This product is not considered hazardous as shipped. However, fumes and gases released by the welding process may hazardous for health.
Symbols	No hazard symbol applicable.
Signal word	No signal word applicable.
Hazard statement	H315, Causes skin irritation. H317, May cause an allergic skin reaction. H319, Causes serious eye irritation. H334, May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335, May cause respiratory irritation. H351, Suspected of causing cancer. H361, Suspected of damaging fertility or the unborn child. H372, Causes damage to organs through prolonged or repeated exposure (bone, central nervous system, lung, respiratory tract, teeth and skin).
Precautionary statement	P260, Do not breathe fumes or vapours. P264, Wash hands thoroughly after handling. P270, Do not eat, drink or smoke when using this product. P271, Use only outdoors or in a well-ventilated area. P273, Avoid release to the environment. P280, Wear protective gloves, protective clothing and eye/face protection. P314, Get medical advice if you feel unwell.
Other known hazards	Spatter and melting metal can cause burn injuries and start fires. Arc rays can severely damage eyes or skin. Electric shock may result in death.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS number	Concentration in percentage
Chromium	7440-47-3	15 - 40
Nickel	7440-02-0	10 - 30
Manganese	7439-96-5	1 - 5
Silicone	7440-21-3	0.5 - 1.5
Copper	7440-50-8	0.1 - 1
Molybdenum	7439-98-7	0.1 - 1
Cobalt	7440-48-4	0.1 - 1
Zirconium oxide	1314-23-4	3 - 7
Calcium fluoride	7789-75-5	1 - 5
Limestone	1317-65-3	1 - 5

4. FIRST AID MEASURES

Inhalation	If breathing has stopped, perform artificial respiration and obtain medical assistance immediately. If breathing is difficult, provide fresh air and call physician.
Eye contact	Flush eyes with clear water for at least 15 minutes to remove dusts or fumes. If irritation persists, obtain medical assistance. For burns eyes caused by arc flash, consult a physician.
Skin contact	For skin burns from arc radiation, promptly flush with cold water and get medical attention. To remove dust or particles wash with mild soap and water.
Ingestion	Rinse mouth thoroughly with water, do not induce vomiting and call a physician or the local poison control center.
Most important symptoms and effects	Short-term (acute) overexposure to welding fumes may result in discomfort such as the irritation and corrosion of the skin, eyes and respiratory tract, coughing, fever, shivers, headaches, vomiting, breathing difficulties and a chemical pneumonitis. Long-term (chronic) overexposure to welding fumes may lead to the irritation of the respiratory tract, sensitization of the pulmonary and cutaneous systems, tremors, muscular weakness and problems to the central nervous system.

5. FIRE-FIGHTING MEASURES

Fire hazards	As shipped, these products are non-flammable, non-explosive and essentially inert. However, during welding process, electrical arc and sparks can ignite combustibles and flammable products.
Suitable extinguishing media	Use appropriate extinguishing agent according to the type of fire situation.
Unsuitable extinguishing media	Using water jet as an extinguisher, may spread the fire
Special protective equipment and precautions for fire-fighters	Wear self-contained breathing apparatus and a full protective clothing.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	As shipped, these products presents a low risk in case of accidental release. Wear proper protective clothing and a respiratory gear if required. Evacuate and secure the spill area.
Methods and materials for containment and cleaning up	Ensure adequate ventilation, avoid dispersion of spilled material, avoid generating dust and prevent the release of the product into the environment. Store the released product and dust into an appropriated waste container. Refer to section 13 for proper disposal.

7. MANUTENTION ET STOKAGE

Precaution for safe handling	Handle with care to avoid injury. Wear glove and individual protective equipment. Avoid exposure to dust and do not ingest.
Conditions for safe storage	Store in closed original container in a dry place
Incompatible materials	Keep away from chemical substance like acids and strong bases, which could cause chemical reactions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters	**Chemical name**	**Exposure limit values**	**Source**
	Chromium	0.5 mg /m^3, TWA	ACGIH
	Nickel	1.5 mg /m^3, TWA	ACGIH
	Manganese	0.02 mg /m^3, TWA	ACGIH
	Silicone	2 mg /m^3, TWA	ACGIH
	Copper	1 mg /m^3, TWA	ACGIH
	Molybdenum	10 mg /m^3, TWA	ACGIH
	Cobalt	0.02 mg /m^3, TWA	ACGIH
	Zirconium oxide	5 mg /m^3, TWA as Zr 10 mg /m^3, STEL as Zr	ACGIH
	Calcium fluoride	2.5 mg /m^3, TWA as F	ACGIH
	Limestone	10 mg /m^3, TWA	ACGIH
	Welding fumes	5 mg /m^3, TWA	ACGIH
	The Threshold Limit Values (TLV) are published by the American Conference of Governmental Industrial Hygienists (ACGIH). The recommended general limit for welding fumes (not otherwise classified) is 5 mg/m^3. The ACGIH 2014 states that the Threshold Limit Values (TLV) should be used as guides in the control of potential health hazards and should not be used as fine lines between safe and dangerous concentrations. TWA : Time-weighted average = VEMP : Valeur d'exposition moyenne pondérée. STEL : Short-term exposure limit = VECD : Valeur d'exposition courte durée. CL : Ceiling limit = VP : Valeur plafond.		
Appropriate engineering controls	Use enough general ventilation and local exhaust at the work site to keep the fumes, gases and dusts from the worker's breathing zone and the general area. Train the worker to keep his head out of the fumes.		

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Individual protection measures	Eye/face protection: Wear helmet or use face shield with filter lens. Provide protection screens and flash goggles, if necessary, to shield others. As a rule, start with a shade that is too dark to see the work zone. Then go to the next lighter shade which gives sufficient view of the weld zone. Skin protection: Wear hand, head and body protection which help prevent injury from radiation, sparks and flames. (See CSA W117.2.) At a minimum, this includes gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the worker not to touch live electrical parts and to insulate himself from work and ground. Additional protection for fluxes and chemicals aids may be required to prevent skin or eye contact. Respiratory protection Use a CSA approved respirator when working in confined space or where local exhaust or ventilation does not keep exposure below the recommended exposure limit. (Refer to CSA Z94.4 "Selection, Care and Use of Respirators").

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, physical state	Flux cored wire containing metal and non-metal powder
Colour	Metallic grey
Odour	No data available.
Odour threshold	No data available.
pH	No data available.
Melting point / Freezing point	> 1500°C
Initial boiling point / boiling range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Lower flammable / explosive limit	No data available.
Upper flammable / explosive limit	No data available.
Vapour pressure	No data available.
Vapour density	No data available.
Relative density	6 – 9 g/cm^3
Solubility	No data available.
Partition coefficient – n-octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	No data available.

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10. STABILITY ET REACTIVITY

Reactivity	These products are non-reactive under normal conditions of use, storage and transport
Chemical stability	These products are stable under normal conditions of use, storage and transport
Possibility of hazardous reactions	None under normal conditions
Conditions to avoid	None under normal conditions.
Incompatible materials	Contact with acids solutions may generate explosive gas like hydrogen
Hazardous decomposition products	Under normal conditions of storage and use, any decomposition products may be produce. When these products are used in a welding process, hazardous fumes and gas may generated by the volatilisation, the reaction or the oxidation of the ingredients listed at the section 3, with those from the base metal, coating, shielding gas and contaminants. During welding process, some hazardous gas may be produced, such as carbon monoxide and carbon dioxide (CO and CO_2). Use of argon (Ar) as shielding gas can generate ozone (O_3) and nitrogen oxides (NO_x). The presence of residual degreasing solvents (chlorinated hydrocarbon) on the welding surface may generate phosgene ($COCl_2$) and hydrogen chloride (HCl) which are highly toxic gases.

11. TOXICOLOGICAL INFORMATION

Routes of exposure	The most likely risk of exposure during a welding process may affect respiratory route, skin and eyes
Inhalation	These products when use during a welding process, produce welding fumes and gas which can be absorbed by respiratory route and may lead to major health problem.
Skin contact	Arc ray can injure skin and cause skin cancer
Eye contact	Arc ray can injure eyes and lead to blindness
Acute toxicity	Short term (Acute) overexposure to welding fumes (ACGIH 2014 TLV-TWA of 5 mg/m^3) may lead to the irritation of the skin, eyes and respiratory tract, coughing, fever, shivers, headaches, vomiting, breathing difficulties and a chemical pneumonitis.
Chronic toxicity	Long term (Chronic) overexposure may lead to the irritation of the respiratory tract, sensitization of the pulmonary and cutaneous systems, tremors, muscular weakness and problems to the central nervous system. Welding fumes and dust may contain chromium, nickel and cobalt compounds which are known as carcinogen by the International Agency for Research on Cancer and ACGIH Manganese and its compounds may cause irreversible damage to the central nervous system, including the brain, which may lead to slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait. Exposure to crystalline silica such as quartz can lead to silicosis and is also known as carcinogenic. Crystalline silica is also found in the bentonite and limestone.
Numerical measures of toxicity	Classification and quantification of welding fumes and dust generated during welding process are difficult to determine because of varying base metal, coating and contaminations.

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12. ECOLOGICAL INFORMATION

Écotoxicity	No data available.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No data available.

13. DISPOSAL CONSIDERATIONS

Disposal instruction	Dispose of non-recyclable products in full compliance with the local and governmental regulations. Reduce waste production by recycling containers and packaging residues in order to protect environment in accordance with the local and governmental regulations.
	Used filters form fumes extractor must be considered hazardous material and discarded in full compliance with the local and governmental regulations.

14. TRANSPORT INFORMATION

UN number	No UN number applicable, these products are not classified as dangerous goods for transport.
UN proper shipping name	No UN designation applicable, these products are not classified as dangerous goods for transport.
Transport hazard class(es)	Not regulated
Packing group	Not regulated
Environmental hazards	Not regulated
Special precautions	Not regulated

15. REGULATION INFORMATION

Read and understand the manufacturer's instructions and the precautionary label on the product. (See CSA W117.2 "Code for Safety in Welding and Cutting" published by Canadian Standards Association).

16. AUTRES INFORMATIONS

Date de création	Date de révision	Numéro de révision
25 novembre 2017		0